

The Ministry of Education and Science of the Russian Federation

«APPROVED»


Deputy Minister of Education and
Science of the Russian Federation

_____ A.B. Povalko
« ____ » _____ 2015

«CONFIRMED»

Rector of Saint Petersburg National
Research University of Information
Technologies, Mechanics and Optics

_____ V.N. Vasilyev
« 03 » *February* 2015



ACTION PLAN
(“The Roadmap”)
for the Implementation of the
Program for Enhancing the Competitiveness of the
Federal State Autonomous Educational Institution of Higher Education
“Saint Petersburg National Research University of Information
Technologies, Mechanics and Optics”
among the Leading World Research and Educational Centers
for 2013–2020.
(stage 2 – 2015-2016)

Saint Petersburg, 2015

List of Contributors

Saint Petersburg National Research University of Information Technologies, Mechanics and Optics Staff Team

1. Vasilyev, V.N., Prof., D.Sc., Corr. Member of the Russian Academy of Sciences,
Corr. Member of the Russian Academy of Education, Rector
2. Belov P.A., D.Sc., head of the International Research Center “Metamaterials”
3. Veklich A.N., head of the Strategic Communications Department
4. Didkovskaia M.K., head of the Internationalization Sector
5. Ivanov, A.V., Senior Scientist, PhD, Vice Rector for Economics and Finance
6. Kazin, F.A., PhD, Head of the Department for Project Management Development
7. Kozlova D.K., PhD, Director of Institute of International Development and
Partnership
8. Kushelev S.A., PhD, head of the HRM Department L
9. Lukovnikova, N.M., Director of the Center for Science and Technology Foresight
10. Markina, G.L., Head of the Department of Information Support for Bidding to
Open Competitions for Federal and Municipal Projects
11. Melchakova I.V., PhD, Head of the International Research Department
12. Mikhailova, E.V., Head of the Unit for Strategic Planning and Development
13. Nikiforov, V.O., Prof., D.Sc., Vice Rector for Research
14. Popova, I.A., Ph.D., Head of the Department of Information Technology
15. Razgulyaev K.A., leading analyst of the Science and Technology Foresight Unit,
Strategic Development Department
16. Serebryakova V.S., PhD., Advisor to Rector, Hi-tech Companies Relations
17. Sukhorukova M.V., PhD, Director of the inter-university student business
incubator
18. Stafeev, S.K., Prof., D.Sc., Dean of the Faculty of Natural Sciences
19. Hagen, S.G., Prof, Vice Rector for Change Management
20. Khan D.V., Analyst of the Science and Technology Foresight Unit, Strategic
Development Department

- 21.Chistyakova, M.A., PhD, Head of the Department for Strategic Development
22.Shehonin, A.A., Assoc. Prof., PhD, Vice Rector for Teaching and Methodology
23.Yanykina, N.O., Head of the Innovation Department


Consultant:

Tatiana Schofield, professor, visiting lecturer and consultant of Imperial College London; director of consulting company Synergy lab.

Main text of the document on 79 pages

Appendices 18 on 56 pages

Rector
of Saint Petersburg National Research
University of Information Technologies,
Mechanics and Optics


____ V.N. Vasilyev
«03» February 2015

TERMS AND ACRONYMS

APEC	– Asia-Pacific Economic Cooperation
AC	– Academic Council
AMS	– Administrative and Managerial staff
ASI	– Agency of Strategic Initiatives
GP	– Graduation Paper
HTFI	– Hi-tech Fields of Industry
WTO	– World Trade Organization
APE	– Additional professional education
EEA	– Eurasian Economic Association
EU	– European Union
CJSC	– Closed Joint-Stock Company
ICT	– Information and Communication Technologies
IT	– Information Technologies
ITMO	– Federal State Autonomous Educational Establishment of Higher
University	Education “Saint Petersburg National Research University of Information Technologies, Mechanics and Optics”
SIE	– Small Innovative Enterprise
IRC	– International Research Center
IFRS	– International Financial Reporting Standards
IMS	– University Information Management System
RI	– Research Institute
R&D, DTW	– R&D, Design and Technological Works
R&DDP	– R&D and Design Projects
R&DP	– R&D Project
TRS	– Teaching and Research Staff
ATPD	– Advanced Training and Professional Development
PDF	– Priority Development Fields
PTS	– Professorial and Teaching Staff

IP	– Intellectual Property
SI	– Strategic Initiative
CIS	– Commonwealth of Independent States
DDP	– Double-degree Program
DBM	– Database Management System
USA	– United States of America
CUC	– Common use Center
SCO	– Shanghai Cooperation Organization
ACM ICPC	– ACM International Collegiate Programming Contest
KPI	– Key Performance Indicator
PBL	– Problem-based learning
POL	– Project Oriented Learning
R&D	– Research and Development
QS	– QS World University Rankings
RAE	– Research Assessment Exercise
SPIE	– The Society of Photo-Optical Instrumentation Engineers
THE	– Times Higher Education
UCLA	– University of California, Los Angeles
UK	– United Kingdom
USE	– Unified State Exam

TABLE OF CONTENTS

1. The Key Performance Indicators (KPIs) of the University and the Means of Achieving Them	9
1.1. The Aim of the University and Target Indicators	9
1.2. Target model of ITMO University	12
1.2.1 ITMO University Mission	12
1.2.1.1 Mission Statement	12
1.2.1.2 ITMO University in 2020	12
1.2.1.3 Competitive advantages of ITMO University	14
1.2.1. The Benchmark Group of the World's Leading Research and Educational Institutions	15
1.2.2. Marketing Strategy	17
1.2.3.1 Marketing strategy for the R&D Market	17
1.2.3.2 Marketing Strategy for Student Admissions	19
1.2.3.3 Marketing Strategy for the Labor Market	21
1.2.3. Information Infrastructure of the University	23
1.2.4. Human Resources of the University, Including Top Management, PTS and TRS	24
1.2.5. The Future Features of ITMO University's Infrastructure and Facilities	25
1.2.6. Economic and financial model	26
1.3. Strategic Initiatives	28
1.3.1. Strategic Initiative 1 - Securing a World-class Level of Scientific Research and Development Projects in the Fields of IT and Photonics	29
1.3.2. Strategic Initiative 2. Global education: Personal Development and Professional Competitiveness	33

1.3.3. Strategic Initiative 3. “Creation of a Corporate Culture and Environment that Positively Impacts on the Development of Highly Professional Personnel”	36
1.3.4. Strategic Initiative 4. ITMO University Global Brand-building	40
1.3.5. Strategic Initiative 5. Growth of the Innovation Ecosystem Potential: Knowledge and Technology Transfer	45
1.3.6. Strategic Initiative 6. Transformation and Development of the University Management System	49
2. Action plan (“The Roadmap”) for the Implementation of the Program for Enhancing the Competitiveness of ITMO University	54
2.1 Key Performance Indicators (KPIs)	54
2.2 Action plan (“The Roadmap”) for the Implementation of the Program for Enhancing the Competitiveness of ITMO University for 2015-2020.	56
Strategic Initiative 1 - Securing the world-class level of scientific research and development projects in the fields of IT and photonics	56
SI 6. Transformation and development of the university management system	80
Action 6.4.4 «Foundation and development of the city prognostic cluster»	87
3. Appendices	88
Appendix 1. Subsidized funding	88
Appendix 2. Consolidated table of funding needs	95
SI 6. Transformation and development of the university management system	98
Appendix 3. Performance indicators, calculated according to the individual methods	100
Appendix 4. Methods of calculation of additional performance indicators	102
Appendix 5. Changes in the Target Model of the University	104

Appendix 6. ITMO University in 2020	105
Appendix 7. Priority Research Fronts of ITMO University	106
Appendix 8. Institute of Translational Medicine	107
Appendix 9. The Institute of Design and Urban Studies	110
Appendix 10. The “World of Science” in “Lakhta-Center”	112
Appendix 11. Organization of Venture (Seedcorn) Foundation	115
Appendix 12. The International Festival of Social Projects and Entrepreneurship	117
Appendix 13. St. Petersburg Annual Forum for Spatial Development	119
Appendix 14. Project ‘Foundation of the Innograd of Science and Technology’ (Innograd – city of innovation)	121
Appendix 15. Project ‘International Technological Cluster ‘IT, Communications and Optics in Culture and Art’	126
Appendix 16. Project «Foundation and development of the city prognostic cluster»	133
Appendix 17. Council for International Recruitment	135
Appendix 18. International Year of Light and Light-based Technologies in Saint Petersburg	137

1. The Key Performance Indicators (KPIs) of the University and the Means of Achieving Them

1.1. The Aim of the University and Target Indicators

The Aim of the University

Strategic aim of ITMO University is to achieve a leading position among the world educational and research elite by introducing cutting-edge research in the field of IT and Photonics, and on this basis the development of highly skilled personnel and the commercialization of R&D in the interests of improving the competitive advantage of our country.

Target indicators

№	Indicator name	Units	2013 *	2014 *	2015 5	2016 6	2017 7	2018 8	2019 9	2020 0
Main target indicators										
1	Position (rounded to nearest 50) in global ratings, place (in the institutional list and in specific subject lists)									
1.1	Position in general ranking of ARWU – (Academic Ranking of World Universities)	Position	-	-	-	-	-	-	-	-
1.2	Position in subject ranking of ARWU – (Academic Ranking of World Universities)	Position	-	-	-	-	-	-	-	-
1.3	Position in general ranking of THE – (The Times Higher Education World University Rankings)	Position	-	-	-	-	-	-	400	350
1.4	Position in subject ranking of THE (Engineering & Technology) – (The Times Higher Education World University Rankings)	Position	-	-	-	-	-	-	100	100
1.5	Position in	Position	-	-	701	550	450	400	350	300

	general ranking of QS – (QS World University Rankings)									
1.6	Position in subject ranking of QS – (Computer Science & Information Systems) - (QS World University Rankings)	Position	-	-	-	200	200	150	100	90
1.7	Position in subject ranking of QS – (Materials Science) - (QS World University Rankings)	Position	-	-	-	200	200	150	100	90
2	Number of articles in Web of Science and Scopus (per researcher, repetitions excluded)									
2.1	Number of publications in Web of Science database per researcher	Number	1,03	1,45	1,50	1,65	1,95	2,45	3,00	3,55
2.2	Number of publications in Scopus database per researcher	Number	1,47	2,18	2,26	2,40	2,66	3,45	4,35	5,31
3	Average indicator of citations per one researcher, calculated as an aggregate number of all the articles cited in the Web of Science and Scopus, repetitions excluded									
3.1	Average indicator for citations per researcher, calculated as an aggregate number of all the articles cited by the Web of Science, repetitions excluded	Number	1,9	2,57	2,64	2,93	3,30	3,67	4,03	4,40
3.2	Average indicator of citations per researcher, calculated as an aggregate number of all the articles cited in Scopus, repetitions excluded	Number	2,5	3,40	3,50	3,88	4,37	4,85	5,34	5,82
4	Percentage of foreign	%	0,9	2,1	2,2	2,5	3,0	4,0	5,4	7

	professors, teachers and researchers in the total number of this type of faculty, including Russian specialists possessing a PhD from foreign universities									
5	Percentage of foreign students enrolled on general educational programs of ITMO University (including students from CIS)	%	7,9	10,9	11,0	12,7	14,3	17,0	19,8	21,9
6	Average USE grade for the students of ITMO University enrolled on general educational programs with tuition and fees covered by the State, including Bachelor and Specialist programs	grade	80,5	79,3	79	79	79	79	79	79
7	Percentage of external revenue generated from non-government sources in the total university turnover	%	29,7	35,6	28	28,5	29	29,5	30	30,5
Additional target indicators										
8	Ratio of Master's and PhD degree graduates to Bachelor and Specialist degree graduates (for full-time students)	%	50	58	69	78	82	100	102	105
9	Percentage of income from R&D projects in	%	47,5	47	48	49	50	51	52	53

	ITMO University's turnover									
--	----------------------------------	--	--	--	--	--	--	--	--	--

1.2. Target model of ITMO University

1.2.1 ITMO University Mission

1.2.1.1 Mission Statement

The Mission of ITMO University – is to generate cutting-edge knowledge; the implementation of innovative findings; the preparation of an elite workforce capable of working in a fast-moving world; and ensuring outstanding progress in Science and Technology.

1.2.1.2 ITMO University in 2020

The direction of change in ITMO University, and its reputation, will, by 2020, have been subject to the following global trends:

- Growth in global mobility and increasing competition for talent (attracting the best students, faculty and researchers) and competition for access to resources;
- The Creation of a global market for educational service and the overlapping of the national and global academic worlds;
- The globalization of industry and capital, influencing the development of open innovation systems, partnerships and mergers between large companies and national research centers, as well as the financing of scientific research;
- The increasingly globalized market for R&D; the change of the technology platform industry standard to “industry 4.0”; the development of smart networks and environments (1st and 2nd generation);
- The continuous improvement in the application of internal university technologies (namely, the integration of research, innovation and educational activities, the improvement of management processes, the deepening relations with business, the diversification of financial and funding mechanisms, the development of information systems, application of project management methodologies, PR, HR, etc.)

Top ratings today are held by universities that not just subject to, but they themselves shape, the above global trends. These universities:

- Form the global intellectual space by being transnational, **global universities**;
- Carry out the breakthrough research, ensure the generation of advances in knowledge and the implementation of innovative projects in their role as **leading research universities**;
- Adopt effective management technologies from business, develop a diversified financial base, develop contacts with business, society and state, stimulate a culture of initiative-taking and innovation-support throughout the university community, in their role as **entrepreneurial universities**;
- Meet the needs of their target audiences for self-realization, development, creativity, individuality, identify faculty and students as their key asset, and invest in human capital and society in general, in their role as **socially responsible and person-focused universities**.

In the light of global trends and in line with their benchmark universities, ITMO University is developing a target model for itself in 2020, characterized by four features:

- Global;
- Research-led;
- Entrepreneurial; &
- Socially responsible and person-focused

ITMO University in 2020 will be the market leader in specialized technology niches (see 'Marketing Strategy', Section 1.2.3.1) and an active social and economic actor, capable of developing big ideas to tackle global challenges. First, there is the challenge of ensuring secure information (whereby the solution lies in the active implementation of a quantum approach to data transfer) and in the protection of our cultural heritage (by introducing IT and Photonics into culture and art).

We address global challenges by setting our institutional Strategic Aim and formulating a comprehensive target model which is achieved through the implementation of the tasks and objectives set out in our six Strategic Initiatives (SIs) - see the Action plan in Section 2.2. Each SI contains a portfolio of key projects, aimed at enhancing the competitiveness of ITMO University and

implementing a strategy to position ITMO amongst the world's leading research and educational institutions (see Sections 1.3.1. – 1.3.6).

The target model of ITMO University (see Appendix 6) is oriented towards reaching the strategic goal and fulfillment of the University mission. We believe we can achieve success on the basis of refining our current competitive advantages, building on many years of the University's existing achievements (i.e. our strong research background, world-famous scientific discoveries, unique methods of teaching, numerous wins in the world programming championship, and so on.)

1.2.1.3 Competitive advantages of ITMO University

I. Unique research and scientific profile, focused on IT, Photonics and their convergence:

ITMO University's science and technology research specialization is unique, owing to the convergence of two 21st century cutting-edge technologies; namely, IT, including Computing, and Photonics. This symbiosis has created a very powerful potential for growth and given us leadership in this technological niche.

The key science and technology research specializations at ITMO University are in fact aligned with a world trend towards the development of convergent technologies. They will offer us a favorable environment by which to achieve our Strategic Aim and they give direction to our marketing strategy (see our research concentration and marketing strategy for the R&D market – in Section 1.2.3.1)

II. ITMO University as a “ventures investor”:

ITMO University acts as a ventures investor, managing its own portfolio of IP, projects and start-up companies and undertakes venture investments in promising projects with high potential for commercialization. The University now has substantial experience in managing its innovation ecosystem, creating an environment and culture of entrepreneurship, which has been actively being copied by Russia's regions from 2013 onwards. (See Section 1.3.5)

III. Unique technologies for training scientific and engineering elite:

University has all the technologies required for training programmers, based on the results of ITMO's own teaching experience and methodology. The technology has won ITMO University the title of being the only 5-times champion in the world

student programming competition. These unique technologies are in high demand, and ITMO University professionals successfully coach teams from the world's leading universities on their way to success.

IV. Multidisciplinary international educational programs

ITMO University specialization is founded on its leading position in IT and Photonics, their convergence and implementation in various areas of the curriculum. Educational programs are designed to be both multidisciplinary as well as practice-oriented and international. In cooperation with the foreign partner universities, we offer Master's and PhD programs leading to professional careers in range of related fields.

V. A System for developing leadership skills and common core competences in students

ITMO University has introduced the idea of intensive programs in the social sciences and humanities for our students. These mainstream curriculum and extra-curricular educational programs are aimed at developing critical-thinking skills, teamwork ability, foreign language skills, communication, entrepreneurial and management competences. In addition, students' entrepreneurship is actively supported at the University: we organize frequent meetings with investors, business angels, leaders and mentors to ensure students' future success.

VI. Openness and dynamic change:

Based on best practice in the world's leading educational establishments, ITMO University has acquired substantial experience of managing organizational change and transformation. Change management is led by a Vice Rector at the University giving it high profile and acceptability. The capacity to change may also be due to our flexible organizational structure and decentralized management.

VII. Inclusion in social and economic development of the region:

ITMO University has the knowledge to solve important social and economic tasks at regional level, simultaneously laying the foundation for science and technology research projects, which have great potential for the next 5-10 years. A distinctive characteristic is our focus on the needs of the economy and society.

1.2.1. The Benchmark Group of the World's Leading Research and Educational

Institutions

Selection of the University's benchmark group of leading world research and educational institutions has been based on the following criteria:

- geographical representation: focus on the three academic regions: Europe, Asia and North America;
- retrospective analysis: similarity of growth over time, achievement in terms of status and educational/ research profile;
- correlation between the patterns of growth: similarity of key educational and research activity; key target areas; academic directions; correlated with strong features of selected Universities.

Based on the above-mentioned principles, the five of the world's leading universities were chosen. Their competitive advantages are presented below.

Delft University of Technology

- outstanding engineering background;
- balance of technical and humanitarian directions;
- high entrepreneurial potential;
- active application of «learning by doing» in education process.

Hong Kong University of Science and Technology (HKUST)

- strong (for technical school) humanitarian background;
- high level of internationalization;
- focus on post-graduates programs;
- sustainable growth of research income.

Korea Advanced Institute of Science and Technology (KAIST)

- recruitment of accomplished foreign specialists (including Noble Prize Winners) to key University's positions;
- focus on master and post-graduates programs;
- basic center for Korean strategic research projects;
- developed venture eco-system.

Tsinghua University

- diversification of academic activity;

- focus on master's and post-graduate programs;
- active development of medical area.

The University of Arizona at Tucson:

- one of the world's leading centers for optical science;
- active development of innovation eco-system and personnel enhancement system;
- active development of medical area.

1.2.2. Marketing Strategy

The Marketing strategy is aimed at positioning and boosting the image of ITMO University as the global leader in IT and Photonics technologies, creating a demand for our intellectual products and for programs preparing people for the knowledge-based economy.

The integration of the Marketing strategy into the general development of the University and has university-wide application through SI.4 and is aiming at gaining global University recognition and international brand promotion.

The separate actions for implementing the complex marketing strategy for target markets are set out in various Strategic Initiatives (SI). SI.1 (Science) and SI. 5 (Innovations) will determine the key steps for promoting ITMO University's intellectual products in global R&D markets; the measures in SI.2 (Education) include unique mechanisms for potential student recruitment; SI.3 (Personnel and Human Resources Management) covers the complex approach necessary for forming partnerships with employers.

The marketing strategy for each target market takes account of global trends in tertiary education, science and technology, current and future market conditions and opportunities for implementing ITMO University's unique competitive advantages, mentioned in 1.2.1.3.

1.2.3.1 Marketing strategy for the R&D Market

Marketing goal is to form ITMO University's international reputation as that one of the leader and to achieve substantial success in the world R&D market in the breakthrough fields of IT, Photonics and their convergences.

ITMO University's marketing strategy is targeted at the following tasks:

1) Achieving global breakthrough results in the University's key research competencies: namely,

- computer and programming technologies, network technologies in distributed systems;
- high-performance computing, big data management and expert systems;
- semantic and cognitive technologies, AI and machine learning;
- intellectual, adaptive and self-learning management methods, navigation and traffic control;
- mathematical modeling and visualization;
- meta-materials and new functional materials for cutting edge photon, IT and telecommunication systems;
- nanophotonics and optoinformatics;
- quantum photonics, quantum cryptographic systems;
- laser systems and technologies, including micro and nanotechnologies.

2) Diversification of the research direction and broadening the field of application of ITMO University's research specialisms:

In accordance with the IT and Photonic technology trends of the XXI century it is planned to apply ITMO University's research competencies to new fields:

- medicine (the neurophysiology of virtual reality, genomics, transcriptomics, proteomics, metabolomics, delivering medicine to the organs, cryogen medical equipment, tele-medicine, the mathematical modeling of diseases and their treatment);
- biology (biophotonics, bio-engineering, bio-sensors, bio-compatible bio-degradable and resorbable materials, bioinformatics, multi-modal bio-metric systems);
- urban planning and design (design of city eco-systems, analysis of city data, IT in art and design, interactive theater technologies, technical sight and motion capture systems).

When setting priorities for its research directions, ITMO University analyzes the dominant world trends and undertakes a prognosis of scientific and research markets.

Research efforts of the University, both existing and future ones, focus the world's research challenges, constituting the markets of the future. (See Appendix 7)

3) Intensification of cooperation (including network-based cooperation) with the leading Russian and foreign research organizations (including the Russian Academy of Sciences).

4) Participation in large scientific research projects in order to expand our international cooperation level, namely the European XFEL, and association Multi GNSS Asia (MGA)

5) Conducting large-scale scientific research, including fundamental scientific research (either as a part of R&D projects financed from the University's own budget, or as a part of the international competitiveness growth program, or as a part of The Federal Targeted Programs, or as a part of Russian Scientific Foundation and Russian Foundation for Fundamental Research, or as a part of international research projects); applied scientific research (as a part of The Federal Targeted Programs, or as a part of Russian Scientific Foundation, or as a part of international research projects); experimental design and innovative technology development (commissioned by Russian and foreign companies). Special attention will be paid to the application and commercialization of R&D results. (For further details - see 1.3.5)

1.2.3.2 Marketing Strategy for Student Admissions

Current economic conditions that favor those who can create competitive products dictate that the goal of the University's marketing strategy should be attracting a large number of gifted prospective students to all three levels of education – Bachelor's, Master's and Postgraduate, with a gradual shift towards becoming primarily a graduate education university.

The following trends influence the University's marketing strategy:

- Increasing competition for talented and motivated prospective students from all leading schools and colleges;
- Demand for new interdisciplinary graduate programs in high-tech fields (based on projected labor market conditions);
- Increasing role of online education, offering access to the best courses by the world's leading universities;

- Emergence of a large number of “non-academic” and short-term courses unaccredited by universities that are increasing their market share of continuing education.

The trend amongst talented students towards an “elite,” quality education and the trend towards mass education delivered through online courses, which can be considered complementary and which will also determine the marketing strategy of leading universities.

The main objective of ITMO University’s admissions is accepting Russian and international students that can successfully realize their potential in the educational and socio-cultural environment of the University and the City of St. Petersburg. To be a socially oriented university and attractive for talented youth is one of the objectives of ITMO University’s development, captured in our caption, “IT’s MOre than a University.”

ITMO University conducts a system of balanced national and international recruitment through such instruments as the new technological educational platform ‘EdTech’, based on the international open online courses (MOOC), development of the network of centers for popular science engagement, international and national competitions (Olympiads), as well as offering scholarship support for motivated Russian and foreign students.

The admissions strategy varies, depending on the category of prospective students (Russian or foreign) and the level of education (undergraduate and graduate.)

The strategy is aimed at achieving a significant increase in the number of Russian and foreign graduate students, the active recruitment of talented youth from other colleges and regions of Russia, increasing the number of foreign students and broadening our geographical reach from 35 to 70 countries, considering Russia’s strategic interests and including the regions of NIS, the Shanghai Cooperation Organization and Asia-Pacific Economic Cooperation. The share of ITMO University’s prospective students on the national and international markets continues to grow: in 2014, 74 percent of freshmen were from Russia’s regions, while 42 percent of graduate program enrollees were the graduates of other universities (208

colleges, including 40 foreign).

The strategy for attracting foreign students can be divided into two areas: first – attracting foreign students to proprietary programs or joint programs with other universities, second – programs, including short-term, to encourage academic mobility.

The catchment area for international undergraduate admissions is determined by 1) the presence of the Russian language, 2) areas that receive state support, 3) traditional areas of recruitment, which includes working with rating agencies.

Recruiting talented students, including international, for graduate programs, is based on their personal achievements in education and research. Some groups of prospective international students participate in special pre-admissions individual programs. Most of the international graduate students come from leading universities, including ITMO University's partners.

Attracting students from these universities depends on meeting the following criteria: 1) English-speaking environment for education and research, 2) modern and multidisciplinary educational programs, and 3) cooperation with leaders of high-tech industry

1.2.3.3 Marketing Strategy for the Labor Market

ITMO University's strategy recognizes, and takes into account, the following trends of modern employment: flexible forms of employment; professional development with a focus on ethics and common values; the impact of demographics and generational change on the labor market; increasing flexibility and mobility in life and work; the growing role of universities in establishing national and international links; collaboration with leading companies in priority industries; understanding global research trends; and understanding the market for R&D products.

The marketing strategy in the labor market is aimed at full-scale collaboration with businesses and industrial partners. Long-term partnerships in this area are strategic for the development of the University as well as for the national economy in general.

The marketing strategy is based on an integrated approach that encompasses all

aspects of collaboration with the industry:

- Joint solutions to technological challenges;
- Collaborative research and projects;
- Joint participation in grant projects, including with small business;
- Joint use of infrastructure and specialized equipment;
- Joint publications;
- Student internships and final-year projects;
- Employment of graduates
- Engaging with practicing experts who give lectures, etc.

The key objective of ITMO University when it comes to collaboration with employers is to increase the attractiveness of graduates as qualified specialists, competent in related fields. The professional status of future graduates will be boosted by the launch of the “graduate recruitment” programs, supported with internships in large companies.

According to “The Map of New Professions,” which lists new and declining professions by sector, ITMO University has a head’s start in many fields that will be in demand in the near future, including robot-technology and programming of complex systems. Automation and competition in the labor market lead to the domination of complex, highly qualified professions with a creative component. To increase the demand for its graduates as well as raise its own competitiveness, ITMO University offers employers the ‘graduate product’ that they will need not just now but also in two-four years further down the road. It prepares highly qualified specialists that can develop competitive products and technologies, think creativity and solve extra-ordinary tasks.

The strategy for attracting employers differs, depending on the level and specialization of the graduates’ education. To meet the demands of employers, ITMO University targets Russian and international organizations (the latter with offices in Russia, and, in particular, in the North-West region) working in the following sectors of economy: small and mid-sized high-tech and research companies – 60%; large R&D centers – 30%; scientific research organizations – 10%. Because of its

specialization, ITMO University is oriented towards specific employers in IT and photonic technologies, traditional for the University, as well as the convergent areas, including biology, urban studies, design, etc.

1.2.3. Information Infrastructure of the University

ITMO University's modern complex IT infrastructure has been set up to provide the smooth operation of the University's management, and to support ongoing organizational change and the implementation of its strategic tasks.

The structural core is the Information Management System (IMS) – an integrated solution effectively supporting research, R&D, educational activity, project and administrative activity, and financial and economic activities by using an integrated information model.

Development of the systems' components including internet, intranet and mobile solutions development will enhance ITMO University's presence in the global information space and intensify corporate and personal activities.

The University's prospective activity focuses on upgrading the existing IMS to University information ecosystem level, a platform for corporate and personal development (allowing involvement in the ITMO University processes, corporate and personal activity, and integration in global information space) and information infrastructure intellectualization, including implementation of semantic and artificial intelligence technologies.

The strategic profile of the information infrastructure for academic, innovative and educational activities includes the following three basic directions:

1. expansion and systematization of IT-solutions for data collection and systematization (including Big Data solutions) involving departments, cooperation (academic, industrial, etc.), personalities, projects and their outcomes (portfolio, publications base, sciento-metric indexes);
2. promotion and popularization of modern and promising trends: development of connected knowledge database systems (ontologies), organization of open repositories, accumulating services and resources, providing advanced access to external electronic resources,

3. development of internal and external communication tools: creation of web-resources and online media for hubs of information and communication for the academic and research community; expansion of their presence in the international academic community, including professional web-sites; multiplication of the number of communication channels with Russian and foreign business community; development of real-time internal team-work instruments

Upgrading the IT-support tools for the Management system will ensure the comprehensive computerization of the University's business-processes which are currently being reorganized and optimized, including the full-scale implementation of an electronic document flow-system. The development of a shared information content technology, including structuring, analyzing and visualization of information, will build up the analytical services to support decision-making processes at different management levels. Augmented reality technologies and processes visualization (virtual offices and receptions) will increase interactivity and enhance corporate opportunities.

1.2.4. Human Resources of the University, Including Top Management, PTS and TRS

ITMO University is focused on the organization and implementation of comprehensive systematic recruitment of the high-level research and academic Russian and international faculty, the education of talented youth and cooperation with the blue-chip companies in the fields of science, education and innovation.

Human Resources Management policies at ITMO University address the University's employment reputation and visibility in the Russian and international employment markets. The target groups of the Human Resources Management are students, faculty, research staff and administrative staff; auxiliary educational staff; employers; sponsors, partners and graduates.

HR policies are based on the following principles shared by all University's employment responsibilities (departments, staff, students, graduates):

- the University considers staff, students and graduates as a core intellectual resource providing and enhancing competitive advantages;
- staff, students and graduates share a corporate culture and values and promote the

University's reputation and visibility as an employer;

- the University and its employees act as social partners sharing common values and mutually defining the mission, target, strategy and policy of ITMO University's development;
- the University is committed to forming long-term employment relationships with each employee, complying with labor regulations, and providing any employee with the capacity to implement his or her professional competencies and develop personal qualities in line with the direction set by the University's strategic goals and each employee's responsibilities.

According to global trends, ITMO University considers the staff and students its fundamental asset, determining the University's development. In order to enhance the University's academic reputation, the University's recruitment of leading research and teaching staff (as core staff category) is managed on an open competition basis and is underpinned by "joint contract" implementation. The open competition is organized for the Russian and international labor markets.

A special service team organizes international recruitment, based on the recommendations of the Council for International Recruitment and coordinates development and implementation of the local and international academic mobility programs. Human Resources are managed in close cooperation with administrative, research & educational and University's public structures (namely the Human Resources Council). A special environment for integrating foreign specialists into employment with the University has been formed.

In Human Resources Management, we use modern technologies applied by the leading international companies, such as: collection, systematization and analysis of information about current and potential employees; recruitment on a competitive basis; KPI setting and monitoring for each employee; retaining the best staff by setting up incentive schemes and creating a comfortable environment; supporting professional and personal development; and life-long learning.

1.2.5. The Future Features of ITMO University's Infrastructure and Facilities

At the time of the Program's launch, and during the first of phase in 2013-2014, the University built a solid basis on which to achieve its potential. Its definitive

traits are the technical capability of the research and educational processes; the availability of the specialized equipment at the disposal of the Common Use Centers (CUC) in partnership with high-tech industry. At the same time, the existing infrastructure does not support the growing needs of the University and requires further development to meet its goals by 2020:

- Comfortable conditions for work, education and leisure. To achieve that, the University needs to build new classroom building and dorms. Considering limited financial and real estate resources, the University got involved in the development of the “Innograd of Science and Technology” strategic project that is expected to be built in the town of “Yuzhni” in the Pushkin district of St. Petersburg (Appendix 14.) It is expected that the result of participation in this project by the staff and students ITMO, the University will gain access to over 200,000 square meters on a 100-hectare lot. Also, an important role in improving the conditions for work and leisure will be played by improvements and remodels of existing dorms;
- Developed research infrastructure, constant renewal process of equipment and intangible assets. By 2020, the amount of equipment expected to raise threefold compared to the beginning of 2013;
- Infrastructure for deploying a project approach to education, including distance learning;
- Network capabilities for an “electronic university”;
- Highly efficient use of existing facilities by using a developed system of ‘common use centers’, facilities management and the rational use of resources program.

1.2.6. Economic and financial model

The sustainability and efficiency of ITMO University’s target financial model in 2020 will be achieved by a rate of investment in the University’s logistics, human resource and intellectual infrastructure adequate to support future needs, potential activities, as well as to meet the needs of students and other consumers.

By 2020, the aggregate amount of University income attributable to each teaching and research faculty member will be approximately 4.5 million RRu. At the

same time, the share of income from external non-government sources, as well as the additional budget allocated on a competitive basis, will dramatically increase.

Growth in revenues from business activities is the main source of future potential investment for the University and will be achieved from the following activity areas:

- extensive increase in income from traditional non-government sources (education, research, innovation, foreign trade activities);
- boosting productivity through increased independence, ownership and responsibility of the final outcomes of the University's departments' own activities, working with their faculty (human capital), and arising from restructuring changes;
- by increasing the volume and quality of innovative research, conducted using the internal resources of the University, there will be an expansion in the potential development of the University's commercialization activities;
- increase in the sales and volume of products and services - thanks to the implementation of sound and flexible marketing, pricing and advertising strategies;
- decrease in production costs due to the more efficient use of the material and financial resources of the University;
- reduction in administrative costs and losses – arising from the weaknesses in the organization of work - by means of monitoring, complex work analysis and the optimization of business processes in "real time" using an integrated University management information system;
- legal tax-efficiency optimization.

Another substantial financial resource will be available from the special purpose funds of the University as a 'nonprofit organization'. The structure of these funds will include earmarked funds (both within state-sponsored projects, and - increasingly, - obtained on a competitive basis), as well as dedicated revenues. The increase in our revenue target will be achieved through a strategy of fundraising and use of the Endowment Fund.

The long-term revenue structure of the University in respect of its activities will change from the current state of play. It is expected that revenue growth from education services will be limited and will be subject to the development of distance learning technologies, educational services for foreign students and additional vocational education. In contrast, the share of income from research and innovation is expected to grow thanks to the success of International Research Centers and institutes and centers of excellence formed of them. The forecast of structural changes in the income of the University in 2020 in relation to 2012 can be characterized by the following parameters: income from education services will be reduced from 51% to 25%; revenues from R&D will increase from 34% to 60%; earmarked funding and dedicated revenues as a whole remain unchanged (15%). The share of funds from foreign sources of income of the University is to be no less than 10%.

In the advent of changes to the University's income structure, there will be a balanced consolidated budget.

1.3. Strategic Initiatives

Fulfillment of ITMO University's Target Model in 2020 is assured by the implementation of the six Strategic Initiatives (hereafter 'SIs') that serve as ITMO University's transformation drivers aimed at positioning it in the global market:

- SI.1. Securing the world-class level of scientific research and development projects, notably in the fields of IT and Photonics;
- SI.2. Global Education: personal development and professional competitiveness;
- SI.3. Creation of a corporate culture and environment that positively impacts on the development of highly professional staff/faculty;
- SI.4. ITMO University's global brand-building;
- SI.5. Growth of the innovation ecosystem potential: knowledge and technology transfer;
- SI.6. Transformation and development of the ITMO university management system based on the principle of the 'Entrepreneurial University' model.

Successful implementation of each of the SIs is an important factor in achieving the planned target indicators in all the other SIs: e.g. high quality IPR, generated by the IRCs (in SI.1), lays the foundation for the global competitiveness of the spin-out businesses founded at the university (in SI.5); the development of an entrepreneurial environment and culture (in SI.5) provides the conditions for the intensive personal and professional growth of the students (SI2). At the same time, instruments set out in SI.3 ('Fellowships'), SI.4 (participation in large international conferences and the development of the University's multilingual website) and SI.6 (creation of Councils for advising on key directions for University activity and the organization of ITMO Representative Offices abroad) are universally connected and targeted to support change in all the basic directions of the University's development. The integration of these strategic initiatives and their interdependency is all part of the essential logic of change at ITMO University and of its transformation into a world educational and research leader in its chosen specialisms.

Specific plans for the SI implementation and their target indicators are given in Section 2.2.

1.3.1. Strategic Initiative 1 - Securing a World-class Level of Scientific Research and Development Projects in the Fields of IT and Photonics

Implementation of SI.1 is aimed at developing the University's main competitive advantage, which is its unique scientific research and educational profile in line with its development of the cutting-edge technologies of the XXI century (see Part 1.2.3.1) and includes:

- highest priority given to R&D, and to the educational and innovations arising from this priority;
- concentrating the main resources of the university on the main scientific research competencies – IT and Photonic technologies – with the goal of achieving world-class results in these specific research and technology niches;
- diversifying scientific research into the fields new for the University (Medicine, Biology, Urban studies, Design);
- reaching the same volume of scientific publications, citations & number of internationally registered patents, etc. as international universities.

To ensure the highest quality of scientific research activity and achieve the new target model, ITMO University is undertaking the approach based on creating the status of International Research Centers (IRCs) through an open competition. The labs are under the joint leadership of Russian and those foreign scientists who have a high publication record and citation rate and with experience in high-tech industries. This approach allows for rapid achievement of our target indicators; increasing awareness of the University's brand in the international scientific research community; and ensures the sustainability of the new model through the development of the research teams. Our IRCs are the new “growth hot-spots” and the new hubs for attracting talent and resources.

The implementation of SI.1 is carried out in three stages:

Stage 1: 2013-2014 - Intensification of international research in IT and Photonics technology, creating the right organizational conditions for a sharp increase in the numerical indicators for research outputs.

Key results of the first stage:

- The creation of 49 IRCs; development of competition mechanisms for their creation, development of reporting and performance analysis;
- The development of a system for international open recruitment competitions as part of the “ITMO Fellowship and Professorship” program. Two competitions with over 90 participants were held and 12 finalists were recommended for hire by ITMO University;
- Two of ITMO University's own journals have submitted their request to be included into the Scopus database in 2014;
- In 2014, over 740 scientific research outputs were published and included in the international databases, Scopus and Web of Science (580 outputs in 2013);
- In 2014, some 176 foreign research scientists were hired by the IRCs.

Stage 2: 2015-2016: Diversification of research into new areas for ITMO University, such as Medicine, Biology, Urban Studies and Design; considerable improvement have been achieved in the quality indicators for our research outputs (publication in peer-reviewed journals; collaboration with the leading scientific

research centers; participation in large international research projects).

Stage 3: 2017- 2020: Consolidation of IRCs based on areas of research into larger entities, possibly, into networks. The final stage will include the formation of five Centers of Excellence: “Photonics and Natural Sciences,” “Smart Materials,” “Software Engineering, Artificial Intelligence and Robotics,” “Life Sciences,” and “IT in Economics, Social Sciences and Art.”

Implementation of SI.1 will be carried out with the following three objectives.

Objective 1.1. “ITMO Research”: Research in IT and Photonics under joint leadership by foreign and Russian research scientists and/or advanced scientific research organizations, through the foundation of new IRCs.” This initiative is aimed at boosting international research through attracting foreign research scientists to joint projects and through establishing collaboration with leading scientific research organizations. The second stage will include expanding into medicine, biology, urban studies and design. For that, it is planned to create joint research units with leading Russian and foreign research and educational organizations. Special attention will be given to the regular assessment of the IRCs’ effectiveness and establishing the processes for reporting, reorganization and the closure of ineffective research centers.

Objective 1.2. “ITMO Publications”: Increasing ITMO University’s publication rate and improving the quality of the University’s ‘intellectual product’. This task requires a multi-faceted approach and can be broken down into several parts. First is the boost to publication activity from the IRLs. Second, the “ITMO Portfolio” program - which stimulates the individual publication rates of students and researchers at ITMO - will gain additional support. Third, the work to include ITMO’s research publications in international citation databases will continue. Fourth, the database of full-text research outputs by ITMO researchers will continue to grow. Fifth, the University will continue to hold large international research conferences officially recognized by the international scientific research community and organizations. Sixth, international patenting of IP will be carried out on a regular basis.

Objective 1.4. “ITMO Sustainable Research”: Ensuring the financial stability of ITMO University’s research system.” This initiative is aimed at creating and

sustaining research teams and continuing large-scale international research after the completion of the 5-100 Program. This will be realized by creating a system of research matching income generation carried out by the IRLs by increasing the number of contracts from high-tech enterprises, including international ones, and developing a system of IP commercialization (see also Part 1.3.3).

Key aspects of the second part of this SI are:

- Establishment of a Translational Medical Institute together with the Almazov Federal Medical Research Center (see Appendix 8) and the establishment of the Institute of Design and Urban Studies in alliance with the St. Petersburg State Art Academy (see Appendix 9);
- Participation in large international research projects, such as the program of the European X-Ray Free-Electron Laser (European XFEL) and Multi GNSS Asia (MGA) that promotes multi-GNSS utilization and applications in the Asia and Oceania region.

Key aspects and instruments of implementation of the SI.1 are given in the Table below:

Key Emphasis	Key Instruments
Activation of international research in IT and Photonics by broadening the spectrum of application to Medicine, Biology and Urban studies.	Open project contests, launching of the new IRCs, analysis of IRC efficiency, reorganization and closure of the less efficient ones. Creation and organization of the Institute of Translational medicine and the Institute of Design and Urban studies. ITMO University's participation in large international research projects.
Intensification of international publication rate.	Development of "ITMO Portfolio" program that stimulates personal publication rate of students and researchers. Organization of large international scientific research conferences. Promotion of ITMO University scientific research journals in Web of Science и Scopus. Development of open electronic database of research outputs of ITMO University staff. Access to international sciento-metric resources.
Ensuring the financial sustainability of scientific	Attraction of non-government funds. Research and development projects commissioned

research at ITMO University.	by hi-tech companies from ITMO University. Creation and updating of the University R&D Projects Portfolio.
------------------------------	------------------------------------------------------------------------------------------------------------

1.3.2. Strategic Initiative 2. Global education: Personal Development and Professional Competitiveness

While developing the concept “*Hello, we are looking for talent*”, attracting best students to ITMO University for Bachelor’s, Master’s and PhD programs, ITMO University is setting up a competitive and highly professional educational environment. The fundamental components of educational activity at ITMO include a high concentration of talented students, availability of high quality, and unique, educational provision, and a close connection to research, industry and business.

The implementation of SI.2 will be carried out in three stages:

Stage 1: 2013-2014: Establishing a comprehensive system of joint Master’s and PhD programs with the world’s leading universities (including double-degree programs); international accreditation of educational programs; development of online education; increasing the marketing of educational programs and expanding the export of educational services.

Key results of the first stage:

- Establishment of 40 joint Masters and PhD programs in partnership with foreign universities, including delivery through online learning;
- Eight Master’s double degree programs received international accreditation and were awarded the EUR-ACE ® Label based on the NAEE General Policy Statement;
- Establishment of processes for collaboration between IRLs, departments and administrative units for the support of students and staff, including foreign nationals.

Stage 2: 2015-2016: Internationalizing the recruitment of talented young people onto University’s programs, focusing on science and educational international programs, intensive development of English language programs for students and staff, establishment of a system of balanced support and localization for foreign

students and researchers, active development of open online courses.

Stage 3: 2017-2020: Establishment of a sustainable system of collaboration between the Centers of Excellence and managers of educational programs through the creation of Academies for the main areas of research; launch of competitive graduate research programs, based on the aforementioned Academies; delivering practice-oriented engineering education based in a network of innovative departments and high-tech partner companies; positioning ITMO University as a global educational center through its online programs.

SI.2 is aimed at creating a globally competitive model of education through realizing five interconnected objectives:

Objective 2.1. “ITMO-Talent Search – recruitment of talented undergraduate and graduate foreign and home students onto ITMO University’s educational Programs.” Forming a motivated international student-body is possible through such instruments, as organizing knowledge competitions in Physics, Math and other subjects, promoting scientific creativity and grant support for talented Russian and foreign students on a competitive basis.

For younger students, Edutainment, as well as competitions and online interaction, can also be an effective means of finding talented and motivated future students. To implement these ideas, ITMO University will invest its efforts in the “World of Science” project to be opened in the “Lakhta-Center” – one of the key projects of the SI 2. Please refer to Appendix 10.

Objective 2.2 “ITMO – Unique educational programs”: Establishment and development of globally competitive and unique educational programs for undergraduate and graduate students.” This objective is aimed at the development of a multidisciplinary PhD, graduate and undergraduate network programs in collaboration with the leading foreign and Russian universities and research organizations, high-tech companies, as well as using POL and PBL technologies. Today ITMO University will offer three types of Master’s programs: *research, technological and entrepreneurial*. A unique model of practice-oriented learning has been implemented thanks to the Departments’ cooperation with local businesses. Multi-disciplinary Master’s programs, based on the teaching of management,

language and social skills (the ‘Common Core’) are targeted at developing a research and engineering elite.

Delivering a large spectrum of disciplines and modules in English through academic mobility and through open education is geared towards increasing the level of internationalization of education at the University.

Implementation of the “ITMO Fellowship and Professorship” program is designed to attract Russian and foreign instructors working in priority fields. By offering a competition for the positions of *ITMO Visiting Professor* and *ITMO Professor* three times a year, the University expects to improve the quality of education and to support the internationalization of the educational process. Please refer to Section 1.3.3

Objective 2.3 “ITMO – International quality management”: Ensuring the quality of education in compliance with the standards and demands of the global job market.” This initiative focuses on developing effective assessment mechanisms in accordance with international educational standards and accreditation. The delivery of international educational programs necessitates strict quality control.

Objective 2.4 “ITMO – Exceptional experience”: Support of an attractive English-language and cultural environment for delivering educational services to a world-class level.” Along with developing such an environment, this initiative focuses on the full support of foreign students and researchers and the establishment of a dedicated “Student Admissions Office” (SAO).

The Student Admissions Office focuses on providing full support to foreign students, starting with online communication with exchange students and prospective students up to graduation.

The introduction of the new English Language curriculum is aimed at boosting the students’ level of English during the four years of university from the Beginner level (A2) to Advanced (B2). An English-speaking student will become ITMO’s “Ambassador” abroad and will help promote the University in the global community.

Objective 2.5 “ITMO – open course”: Participation in the international and Russian associations of leading universities for open education.” Participation in such organizations forms and supports ITMO’s status as a global university as it provides

access to open online courses and software in the global learning environment. Stage 2 is also marked by the active development of distance-learning programs. These have proven to be highly efficient in attracting students to Universities, especially foreign ones, and also to raising additional finance.

Objective 2.6 “ITMO – PhD: Internationalization and development of the PhD programs” is aimed at the implementation of double degree PhD Programs and broadening the scope for international PhD internship opportunities, support for the young TRS and formation of a system of research internships for PhD students.

Key aspects and the instruments of implementation for SI 2 are given in the Table below:

Key Emphasis	Key Instruments
Search for and retaining talented youth.	ITMO University’s own contests, international centers for high-school kids, grants. Competitive international educational programs.
Internationalization and promotion of the best projects and programs.	International educational programs in partnership with leading world’s universities. MOOCs. European accreditation of educational programs.
Development of English-language environment.	New programs of intensive English language learning.

1.3.3. Strategic Initiative 3. “Creation of a Corporate Culture and Environment that Positively Impacts on the Development of Highly Professional Personnel”

This initiative is aimed at raising the University’s competitiveness on a global scale through transitioning from a personnel accounting system to an HR management system and establishing partnerships with staff and other stakeholders. This can be achieved through the effective use of HR instruments used to motivate, involve, inform about, strategic goals, and assess and inform the activities of the stakeholders.

The transition is carried out through by the systematic modernization of the HR management system and is subdivided into three stages.

Stage 1: 2013- 2014: cementing the foundation for the modernization of the HR management system, including the transformation of staff support mechanisms;

the popularization of academic mobility and ideas exchanges between Russians and foreign colleagues; collaboration with employers as the main consumers of university services; establishing an effective system of collaboration with students and alumni as a necessary element of the partnership.

Key results of the first stage:

- Development of key performance indicators (KPI) for research units at ITMO University;
- Initiating the process of transferring staff onto effective contracts;
- Development and launch of the staff audit program;
- Launch of the “Educational Calendar” project;
- Establishment of the “International Recruitment Council”;
- Launch of a centralized system for recruitment/applications;
- Launch of the Alumni Association and the Endowment Fund;

Stage 2 – 2015-2016: Fine-tuning the system; implementing recruitment mechanisms for specialists with experience in Russian and foreign research and learning centers and businesses; involvement of staff into meeting university-wide objectives; promoting a corporate culture and supporting a comfortable on-campus environment, involving all stakeholders in the University’s development; establishing the alumni network and involving it in partnership with the University.

Stage 3: 2017-2020: Expanding the restructuring outlined in the stages one and two, supporting the internal and external competitiveness by increased openness.

Strategic Initiative 3 addresses the following tasks:

Objective 3.1 “ITMO – Challenge to Change” the transition from personnel accounting to HR management and the establishment of the University as a competitive employer through the systematic strengthening of its HR brand and open international recruitment. This objective has the following parts:

- Improving the system of staff motivation through various methods, including increased openness;

- Development of professional competencies with an emphasis on international standards through implementation of common core educational programs, which include “soft skills”, project management skills, research ethics, etc.;
- National and international staff mobility through internships including cooperation with the Russian researchers currently living and working abroad. It is a useful instrument both for the exchange of professional opinions and the attraction of leading specialists to work at the University;
- Establishment of an open system of international recruitment including the program of invitation of TRS from leading Russian and foreign universities and scientific research organizations (“ITMO Fellowship and Professorship”);
- Developing the mechanism for the effective integration of foreign staff and faculty into the university environment and achieving effective cross-cultural communication;
- Shaping and strengthening ITMO University’s HR-brand as of a sought-after excellent employer. Development and articulation of the caption “Challenge to Change” as the main aspect of the employee value proposition;
- Development of a system of investment in people that views a person as a University’s fundamental asset with a high long-term return on investment;
- Forming a system of regular and effective assessments of University departments and staff/faculty, including feedback analysis and talent management; and a step-by-step transition from a system of “effective contracts” to “unified contract”.

Objective 3.2 “ITMO – Partnerships and Relationships” – development of partner relationships with the University’s stakeholders and diversification of communication channels with target audiences. This objective includes the following:

- Developing a system for career-long support of students and alumni, collaboration with key employers, and involvement of the leading experts in professional events, workshops and open schools for students and alumni.

- Developing the communication skills of students and staff and increasing their knowledge about the current job market, career opportunities and the state of relevant industries.
- Establishing a system of collaboration with alumni, involving the “ITMO University Alumni Association”; relying on their success stories and career growth to promote the image of the University and increase its attractiveness.
- Growing endowment activities and channeling endowment income to projects and to the modernization of ITMO University.

Successfully meeting these objectives will help the University transition from the system of personnel accounting to HR management with the involvement of all University stakeholders. The process will result of the change of a relationship to true partnership where partners are committed to meeting the University’s strategic goals.

Among the key projects of the second state of Initiative 3 is the establishment of the open “Council for International Recruitment,” (Appendix 17) comprising experts from leading national and international HR companies. Another important component is attracting outstanding foreign professors who are in early retirement but who are still willing to share their expertise, based on a similar experience of China and benchmark universities.

Key aspects and instruments of implementation of the SI 3 are given in the table below:

Key Emphasis	Key Instruments
International recruitment.	Open system of international recruitment («ITMO Fellowship & Professorship» Program), job fairs and open contests. Council for International Recruitment. Cooperation with Russian researchers working abroad.
Professional staff and faculty development.	Programs for staff development (academic mobility programs, “Educational Calendar”, “Academic Mobility Map” projects). Programs for developing a staff reserve waiting-list.
Building partnerships with target audiences, creation of the	Instruments for the integration of foreign staff into the university environment. Alumni Association, programs of career support for students and alumni.

HR-brand.	Cooperation with leading employers.
-----------	-------------------------------------

1.3.4. Strategic Initiative 4. ITMO University Global Brand-building

SI.4 is aimed at boosting the University's international competitive advantage by increasing brand awareness of ITMO University internationally, significantly boosting the efficiency of its internal and external communications and improving its recognition worldwide.

The initiative is to be carried out in 3 stages.

Stage 1 2013-2014 - building of a communications management system at the University, communication strategy and global branding development, upgrading of the University's internet portals and websites group.

Key results of the first stage are as follows:

- A strong team for internal and external communications management has been formed;
- The comprehensive re-branding of ITMO University has been completed;
- A strategy for the University's global promotion has been developed;
- The basic Internet policies have been defined.

Stage 2: 2015-2016 – increasing internal and external target audiences' loyalty to ITMO University, implementing the University's global positioning strategy, improving its brand awareness nationally and globally and rapid upgrading of ITMO University's position in the university rankings.

Stage 3: 2017-2020 – development of ITMO University's Community, professional management of University's reputation, improvement of ITMO University's positions in the world rankings

To implement the SI the two tasks will be undertaken.

Main activities of Task 4.1 "ITMO goes global" – namely, creating ITMO University's global brand, improving its recognition nationally and globally" are concentrated on brand promotion of ITMO University, improving its brand awareness, forming its reputation of world-acclaimed University with strong research/scientific background and entrepreneur spirit. Special attention is paid to the ITMO University's presentations at the leading world's conferences, forums and

meetings, as it increases ITMO University's visual and associative recognition by external target audience. A substantive change in ITMO's corporate style in 2014 ultimately resulted in the creation of a new unique image, which has been appreciated, but not yet recognized, by the target audience. To build up a strong global brand, the University's most immediate task will be to increase its visual and associative recognition by external target groups.

A key attractive element of the University's global positioning will be its geographical location.

- *St. Petersburg* is one of the most beautiful world cities, so working or studying in St. Petersburg can be one of the additional attractive moments for foreign student or employees;
- *Brussels* - opening of ITMO University's Representative office in November 2014 in Brussels, Belgium, facilitates the implementation of cooperation projects with international companies and Universities in Europe.

To complete Task 4.1 We shall use the following global promotion instruments:

- Participation and organization of international events in order to provide the active promotion of the University's brand among its target groups;
- Organizing ITMO University's special projects including international educational programs and international recruitment project, "ITMO Fellowship and Professorship", in order to improve its recognition and promote its interests globally;
- Close cooperation with mass-media and other communication channels (publications, press-tours for foreign MM, press-conferences, etc.) in order to broaden the University's information field, attract the largest information agencies' interest in ITMO University's activities including creation of the mass-media comments hot-line by the University experts;
- Intensive development of the ITMO University pages in social networks, such as Facebook, Twitter, Instagram, You-tube, LinkedIn and others, as an efficient tool to attract prospective students and staff. Social networks have also proven to be an effective measure for raising the frequency of University hits on the Internet, as

well as building trusting relationships with target audiences, the improvement of the University's reputation, and, as a result – an increasing number of foreign students admitted to the University;

- The University's expansion into the global information network is carried out through its integration into internet-zones (virtual offices, repositories), increasing the University's presence on the Internet (web-sites, professional social networks, etc) in order to involve the target audience in the University's information field and help increase its positioning in the world rankings.

We have chosen three key hints to improve ITMO University's global recognition and to provide effective promotion:

- *Science and innovation popularization*: growth of the University's academic reputation (cooperation with various associations, international popular science projects, i.e. TED, Science Slam, Open University and others), its integration into global society, providing popularization of Science and innovation (promotion of ITMO University's Fab Lab, Business Incubator, etc.); development of Science Communications (launch of the first Russian Master's degree program "Science Communications" and building up a popular scientific information distribution network (promotion of the scientific and research articles in MM, inspiring interest of MM towards research and science), creating ITMO's own unique popular scientific content (video, photo, articles);
- *Increasing ITMO University's recognition among corporate employers*: building up relations with HR-departments of big companies (special media-projects, company popularity rankings based on students' and alumni opinion), broadcasting of the ITMO University's graduates' success stories in MM, implementation of joint projects in alliance with international employers (internships in the world's top companies in "Work and Travel" format, reality-show about student internships, etc.);
- *ITMO University's HR-brand*: in order to attract high-quality personnel we are going to create a sound and attractive HR-brand ("university as an attractive employer"). The image of ITMO University - as one of the best places to develop

one's career - will be formed with the help of communication tools, modern efficient positioning methods (conventions, exhibitions, participation in events, organization of ITMO's own events).

Completing of the task of the University global recognition (*'ITMO goes global'*) can dramatically influence and increase ITMO University's positions in global ratings in reputation terms among the academic and business community. This is one of the established criteria included in these ratings.

Task 4.2. *"IT's MOre than a University* - creating and developing the united ITMO University community" and building up close links between internal and external University's audiences. The creation of a united community will ultimately lead to the University reaching the target of continuously improving the University's positive reputation, building up the involvement of target groups in the University's activities through their direct participation in its life. This task's implementation is based on realizing a series of activities targeted at forming its corporate culture, including broadcasting the University's basic principles and values to its current and potential communities and the positioning of ITMO University as a *team of professionals*.

ITMO University has become more than a place just for students acquiring knowledge and staff fulfilling their daily duties. Our University is a space for personal development, the development of a culture where staff live, where there is a spirit of people and large organizations being in close community.

It is possible to arouse the interest and increase the involvement of external and internal target audiences in University activities by the following means:

- 'ITMO OPEN' – modern open space and interactive educational platform for high-school kids and students;
- 'ITMO PLACE' – non-conventional creative spaces in University buildings which differ by their characteristic features (Birzhevaya liniya - innovation, Grivtsova Street – robotics, etc.);
- 'ITMO MEDIA' – leading-edge media center for implementing collaborative projects with Russian and International Media.

All of the above-mentioned spaces and projects are also aimed at creating an attractive international environment for foreign students. We have also planned to put together a new sports hall (ITMO Sport) by 2020.

ITMO University Community development is closely linked to the information support of its activities targeted to those University graduates who should become role models and experts for current students. (Meetings with the students, implementing the “Mentor” project, introducing the “responsible assistance” contract to be signed upon enrollment by every student, ensuring that graduates assist, mentor and help the freshmen in their own major).

Integrating the corporate culture into students’ everyday routine, and transmitting ITMO University’s values - even to potential students, is very important. It involves young people in the life of the community from the very start of their contact with the University, creating an initial and long-standing positive image of ITMO University and its culture. (Implementation of students’ creative projects at the University, launching of various “virus” campaigns, opening of the ITMO brand store, café, etc.).

One of the special PR-projects increasing the University’s global recognition will be ‘IT’s MOre than a Year of Light – International Year of Light and Light-Based Technologies’ – a global event organized in St. Petersburg by ITMO University. A comprehensive calendar of worldwide events has been included in the *Year of Light* program is intended to attract the attention of both academic and business communities to scientific research and educational activities of the University and increase its visibility worldwide.

Key aspects and instruments of implementation of the SI 4 are given in the table below:

Key Emphasis	Key Instruments
ITMO goes global! – Promotion of international brand and improvement of ITMO	Participation in large international conferences and conventions. Working with international associations. Cooperation with international mass media and information sources. Promotion of ITMO University’s brand in social networks.

University's visibility in the world educational community	Integration into the world web-environment (development of ITMO University's websites and portals) Promotion of the university with the emphasis on the unique geographical locations of its offices: St Petersburg and Brussels.
IT's MOre than a University – creation and development of a unified community of ITMO University	Formation and development of the corporate culture of the University (cooperation with various target audiences) Open environments ITMO OPEN, ITMO MEDIA, ITMO PLACE etc. Cooperation with alumni. Comprehensive cooperation with alumni, students and prospective students. Building trusting and continuing relationships.

1.3.5. Strategic Initiative 5. Growth of the Innovation Ecosystem Potential: Knowledge and Technology Transfer

This SI is aimed at placing the innovation ecosystem at ITMO University on a higher level of qualitative development, which corresponds to the University's plan to have a world position, taking into account the high impact that its innovation and business activity will have on its reputation. In order to organize a system technology transfer, ITMO University acts as a ventures investor, managing its own portfolio of projects, companies and intellectual products. The University engages in making ventures investments in promising projects with a high potential of commercialization.

The activities are carried out in three stages:

Stage 1: 2013-2014: the formation of a fully-fledged system of service support for tech transfer products and commercialization processes. The service will include the intensive development and upskilling of University staff with regard to commercialization and technology transfer and as well as building cooperation of ITMO University with infrastructure and industrial partners;

Key results of the first stage are the following:

- Engineering center, Technology Transfer Center and FabLab were launched;
- More than 20 training and information innovation-oriented events involving foreign experts for students and staff were organized;
- Programs of students' involvement in projects with the launch of proficiency

certificates;

- Several new SIEs have been founded;
- Cooperation deepened with 40 innovation ecosystem participants (including JSC, 'RVK', JSK 'Rosnano', Skolkovo Foundation) both at national and international level.

Stage 2: 2015-2016: active implementation of mechanisms for selecting IP with high potential for commercialization; support and promotion of the University's innovation projects nationally and globally and the development of all the University's services corresponding with technology transfer and IP commercialization projects at an international level (by 2016 the first University international patents pool for IP will be formed)

Stage 3: 2017-20: ensuring the sustainability of the innovation ecosystem based on the effective management of IP commercialization and innovation projects with portfolio, large-scale and widespread industry cooperation and systematic development of entrepreneurial skills and competences of students and staff.

SI.5 will be implemented by addressing the following tasks:

Task 5.1. 'ITMO Innovation Portfolio' - Establishment and efficient administration of the University's innovative projects portfolio' will be implemented by the means of two interconnected approaches, focusing on the development of translational research:

- Creating within the University a 'virtual' engineering research company providing solutions to business problems;
- Creating a system for the implementation of the University's research results in the national economy, by putting together an IP database (based on the R&D results catalogue mentioned in section 1.3.1.) in order to detect the competitive technologies for further commercialization.

Measures in this area envisage the organization of a systematic process to manage IP owned by the University. Substantial mechanisms for the implementation of this activity will be:

- Creating an investment policy for the University's portfolio of protectable IP,

including mechanisms for technology valuations, marketing and local market research and technology foresight;

- Systematic partnership-building with other parties within the innovation ecosystem on the city, at national and international levels, including financial institutions and business cluster associations;
- Initiation of cooperation projects in the form of small innovative enterprises, involving global industrial partners.

Simultaneously, identification of new substantial directions and forming big project areas able to source multiple applied projects in the form of SIEs on global markets to be supported by regular technology audits and the monitoring of innovation divisions' activity and results combined with constant generation, launching and implementation of ITMO University's big cross-university innovative projects. An example of such an innovative project can be development of M2M "Tele-mechanics and instrumental engineering".

One particular unique example of innovation project support will be the competition process for priority innovation projects organized both in cooperation with industrial and public partners (i.e. photonics and information technologies innovation projects competition organized with "Skolkovo" Foundation) or by ITMO University's Venture Foundation. The pre-seedcorn foundation will be formed at ITMO University to finance University projects in such stages as "technology and market feasibility study", "proof of concept" and "prototyping" in order to support early-stage innovative projects.

Task 5.2. 'ITMO Entrepreneurial Capacity - enhancement of the business culture and management competencies of the University' will be addressed by:

- Developing existing, and implementing new technologies by organizing service support for students, staff and third parties with respect to the implementation of their innovation projects;
- Organization of information and training events in the sphere of innovation and business activity.

To complete the task we will use the relevant service support techniques for the

enhancement of innovation and entrepreneurial activity of the University, namely:

- Brand new, and unique for Russian universities, “technology brokers” who act as intermediary contractors between R&D teams and the world of global business; which includes using the “Project Fellowship” program;
- Specific mechanisms of technology and social entrepreneurship projects - acceleration and incubation;
- Involving leading Russian and foreign experts and entrepreneurs as trainers and mentors in work with startup teams (‘Entrepreneurs-in-Residence’, EIRs).

Building entrepreneurial and leadership skills among the widest possible range of staff and students at ITMO University will be achieved through the:

- Inclusion of cross-university entrepreneur and leadership courses into the obligatory disciplines list and development of entrepreneurship Master’s degree programs including ones within the authority of the newly founded Department of Technology Management and Innovation;
- Full access of students and faculty to innovation events, including technology brokers and fundraising school and inter-University business game “Marketing of Innovations”

Successful realization of the innovation ecosystem enhancement strategic initiative is supported by its close connection with research block (detection of IP and R&D teams with high commercialization potential and with the capacity of solving specific business and industry problems) and education block (forming of soft skills).

Key projects providing innovation and entrepreneurship skills on the second stage are the following:

- Venture (seed) foundation - financial instrument for R&D commercialization (see Appendix 11);
- Annual international social entrepreneurship festival focused on the initiation of socially-oriented business projects, increasing the number of University projects and improving ITMO University’s representatives’ soft skills (see Appendix 12);
- Annual St. Petersburg Forum of spatial development – an initiative of ITMO University, aimed at formation of a harmonious development scenario for Saint

Petersburg and its region as a unified social and economic environment (See Appendix 13).

Key aspects and instruments of implementation of the SI.5 are given in the table below:

Key Emphasis	Key Instruments
Creation of the portfolio of University's innovative projects.	Portfolio of University IP , regular technology audit. Pre-seedcorn foundation. Digest of the external finance sources for university projects.
Development of new innovative companies.	Competitions of innovative projects. University's own venture foundation. Partnership with leading industrial companies.
Enhancement of entrepreneurial culture.	Seminars, training and meetings with renowned entrepreneurs and investors. International festival of social entrepreneurship. Services of innovation infrastructure including technology brokerage.

1.3.6. Strategic Initiative 6. Transformation and Development of the University Management System

The ambitious task of enhancing the University's competitiveness and turning it into a global university, which is able to compete with the world's leading research and educational centers, call for the transformation of the University's management structure.

The activity of SI.6 is aimed at restructuring the management structure and bringing it to a position where it can provide the necessary conditions for achieving the SI aims and undertaking the Program tasks. It will be implemented in three stages:

Stage 1: 2013 – 2014: formation of a project management system able to increase the University's competitiveness including the setting up of management bodies (Coordination Council, strategic initiatives coordinators, Director's office) and new administrative and service divisions necessary for the successful implementation of the Program.

Key results of the first stage are the following:

- the Program Management System has been formed, University structure re-organization has been started (20 administrative departments created and/or re-organized);
- the two main councils of ITMO University's development (Supervisory Council of ITMO University and International Council of ITMO University) have been set up;
- the Representative Office of ITMO University in Brussels, Belgium, has been opened;
- information infrastructure of the University as a complex system of internet, intranet and mobile solutions has been set up.

Stage 2: 2015-2016: reforming the management structure by means of business process optimization based on performance work reviews, initiation of the University's comprehensive development projects, implementation of decentralization and forming the University information eco-system;

Stage 3: 2017-2020: forming of the new structures of research and education activities (Academies, joining SIE and Centers of Excellence, and providing creation and supervision of “research” Master's programs, other Master's degree programs – *technological* and *entrepreneurial* – will be overseen by the Departments), active phase of comprehensive development for our projects, information infrastructure intellectualization including implementation of semantic and artificial intelligence (AI) technologies.

Within the framework of solving task 6.1. ‘ITMO – Efficiency: Improvement of the administration of the University's organization and increasing its productivity during the University transformation process’, the following activities are being carried out:

- Organization assessment execution, detecting of the weak points in key business processes, responsible for effective solving of tasks of enhancing the competitiveness of ITMO University and business process optimization;
- Project management-based operations for the tasks and measures in the “5 to

100” Program implementation, formulating a risk-management system including managing of operation risks in Program implementation;

- Upgrading the University information infrastructure in order to create an information eco-system merging the information systems, resources and processes with personal and collective communication channels;
- Implementing “shared governance” principles, organizing open forums, and academic, expert and public councils.

Key attention on the second stage will be given to business process analysis, optimization and adaptation to specific tasks to be addressed during Program implementation. Processes of search and recruitment of foreign specialists, organizing visits of institutional delegations, procurement logistics, etc. will be optimized. A key indicator for the success of the task implementation lies in releasing scientific and educational departments from admin functions and processes irrelevant to their core activities and functions.

Increasing the Program task-solving efficiency requires us to increase the University’s community involvement in order to address the University’s development and making relevant decisions. According to the plan, councils, strategic sessions, seminars, training for the University's community representatives and external partners on topics of development and implementation of the Program tasks will be launched and developed. In 2015 Councils for each of the University's main strategic directions in the SI framework will be organized: expert councils in the core teaching areas of ITMO University and the development of other research and educational departments. The Assembly of Directors of Partner Corporations will be set up with the main objective of acquiring mid-term and long-term targets for the University’s strategic development in research and staff training activity.

Within the framework of solving task 6.2 ‘ITMO – Change management: Transformation of the University's organizational structure and implementation of systemic change management’ the following activities are being carried out:

- substantive transformation of the University's organizational structure, restructuring, creation, *inter alia* by means of re-organization, of the new

management structures, scientific research divisions and service structure development;

- launching and operation of ITMO University's Representative offices abroad.

In 2015-2016 the following new departments will be set up and launched: the Institute of Translational Medicine, the Institute of Design and Urban Studies and the *Faculty of Technology Management and Innovation* will be re-structured and reorganized comprising 6 new departments.

We shall continue the development of a network of master's departments with programs based in hi-tech organizations and research centers providing a range of innovation and practice-oriented programs leading to professional master's and PhD awards. It is planned to create master's programs in cooperation with transnational Russian companies (or Russian representative offices) or international R&D centers.

Special attention within the framework of Task 6.2 will be given to the process of setting up and running ITMO University's representative offices abroad. The first ITMO representative office opened in Brussels in November 2014, which will add value to promoting ITMO University on the global educational market. It is planned in 2015 to open a representative office in Italy with the focus on promotion and commercialization of the University research output.

It is also planned to develop cooperation programs between ITMO University and the Russian Academy of Science (RAS) Institutes, in particular with the Institute of Silicate Chemistry of RAS and St. Petersburg Institute of Informatics and Automation of RAS.

The task 6.3. 'ITMO – Transparency: Development system for financial self-sufficiency, proficiency and transparency' is focused on implementing measures to develop a financial and economic development model for the implementation of the Program, placing ITMO on a firm financial footing with the upgrading of the budgetary system, a centralized resource management system; the development of and implementation of IFRS accounting system; an upgraded procurement and logistics system, increasing resource management efficiency.

One of the aspects of growing importance is task 6.4, "ITMO – Cutting-Edge projects: the initiation and realization of comprehensive strategic projects in priority

directions”. Examples of such projects are forming of the University’s technological initiatives as well as establishing of the city prognostic cluster (Appendix 16).

Key strategic projects in 2015 will be as follows:

- the strategic project “Establishment of the science and technology City “Innograd” located in the satellite town “Youzhnyi” (see Appendix 14);
- launch of the project – the technology cluster - “IT and Photonic technologies in art and culture” (see Appendix 15).

Key Emphasis	Key Instruments
Modernization of management system and improvement of its efficiency; provision of financial and economic sustainability.	Diagnostics of organizational systems, business-process optimization. Transformation of the organization structure: re-organization of the Departments, implementation of the “single-window” service system. Project management. Information ecosystem. Shared governance. Representative offices of ITMO University in Belgium and Italy.
Initiation and implementation of comprehensive development projects.	Innograd. Cluster of IT and photonic technologies in culture and art. Technology initiatives of the University.

2. Action plan (“The Roadmap”) for the Implementation of the Program for Enhancing the Competitiveness of ITMO University

2.1 Key Performance Indicators (KPIs)

Name of the Indicator	2015	2016	2017	2018	2019	2020
1. Number of staff possessing experience of work in leading Russian and foreign Universities and/or in Russian or foreign research organizations, accepted to the top managing positions at ITMO University.	10	15	20	22	24	25
2. Number of scientific journals of ITMO University listed in the WEB of Science and /or SCOPUS databases	1	2	2	2	3	3
3. Number of persons included into the staff reserve waiting list for the top managing positions of ITMO University.	100	120	150	180	200	200
4. Percentage of the young TRS invited to the University, who have experience of work in leading Russian and foreign Universities and/or in Russian or foreign research organizations, in total number of the young TRS of ITMO University.	8	10	12	15	17	20
5. Percentage of the TRS having participated in academic mobility programs in total number of the TRS of ITMO University.	20	23	35	40	40	45
6. Number of academic mobility programs organized by ITMO University, both for the University staff and other organizations.	260	290	300	350	400	450
7. Percentage of the young TRS in total number of the TRS of ITMO University.	22	24	26	28	30	32
8. Percentage of students enrolled in full-time educational programs, receiving financial support in total number of students enrolled in full-time educational programs.	28	28	29	29	30	30
9. Percentage of the intern researchers and young TRS receiving financial support in total number of intern researchers and young TRS.	50	55	60	60	65	65

10. Number of the programs of the main curriculum and additional educational programs implemented in cooperation with leading Russian and/or foreign Universities and/or with Russian or foreign research organizations.	26	36	43	45	50	57
11. Percentage of the students from the leading universities enrolled in ITMO University in total number of students of ITMO University.	4,0	4,5	5,0	5,5	6,0	7,0
12. Number of the R&D projects implemented with participation of leading Russian and/or foreign specialists and/or in cooperation with leading Russian and foreign Universities and/or Russian and foreign research organizations, including the ones leading to creation of new departments in the university.	33	35	37	38	39	40
13. Number of the R&D and engineering projects implemented in the University in cooperation with Russian and international high-tech companies, including the ones leading to creation of new departments in the university.	23	26	28	30	32	34

2.2 Action plan (“The Roadmap”) for the Implementation of the Program for Enhancing the Competitiveness of ITMO University for 2015-2020.

Strategic initiatives/goals/objectives	Performance indicator (name and measurement)	Funding (mln rubles)/Performance indicator values							
		2015		2016		2017	2018	2019	2020
		1 st half-year period	2 nd half-year period	1 st half-year period	2 nd half-year period				
Strategic Initiative 1 - Securing the world-class level of scientific research and development projects in the fields of IT and photonics	Million rubles	348	345	382,2	381,9	765,5	791,1	812,1	837,8
Objective 1.1. “ITMO Research”: Research in IT and Photonics under joint leadership by foreign and Russian scientists and/or promising scientific organizations, through foundation of the new IRCs.”	Million rubles	319	319	349,8	349,8	701,8	720,5	739,2	757,9
Action 1.1.1. Organization of competitions and selection process for projects. Foundation of new IRCs under joint leadership by foreign and Russian research scientists.	Number of contest proposals	25	0	25	0	25	0	0	0
Action 1.1.2. Organization of work of the IRCs and implementation of	Number of publications in Web	0,5	1,50	0,55	1,65	1,95	2,45	3,00	3,55

research and development projects in the IRCs.	of Science database per researcher								
	Number of publications in Scopus database per researcher	0,8	2,26	0,9	2,40	2,66	3,45	4,35	5,31
	Average indicator of citation per one researcher, calculated as an aggregate number of all the articles quoted by the Web of Science	1,0	2,64	1,1	2,93	3,30	3,67	4,03	4,40
	Average indicator of citation per one researcher, calculated as an aggregate number of all the articles quoted by the Scopus	1,2	3,50	1,3	3,88	4,37	4,85	5,34	5,82
	Number of the R&D projects implemented with participation of leading Russian and/or foreign	29	33	33	35	37	38	39	40

	specialists and/or in cooperation with leading Russian and foreign Universities and/or Russian and foreign research organizations, including the ones leading to creation of new departments in the university								
	Number of proposals submitted to the national, international and regional programs, foundations, etc.	50	300	60	350	400	420	470	500
Action 1.1.3. Establishment of a Translational Medical Institute together with the Almazov Federal Medical Research Center	Number of research projects implemented.	0	2	2	3	4	5	5	5
	Number of educational programs running.	0	2	2	3	4	5	5	5
Action 1.1.4. Establishment of the Institute of Design and Urban Studies in alliance with the St. Petersburg State Art Academy	Number of research projects implemented.	0	2	2	2	3	3	4	4

	Number of educational programs running.	0	2	2	2	3	3	4	4
Action 1.1.5. Participation in large international research projects, namely, the program of the European X-Ray Free-Electron Laser (European XFEL)	Number of large international projects with participation of ITMO University.	1	2	2	3	4	5	5	6
Objective 1.2. 'ITMO – Publications: Increasing ITMO University's publication rate and improving the quality of the University's 'intellectual product'	Million rubles	27	26	32,4	32,1	63,7	70,6	72,9	79,9
Action 1.2.1. Development of the program 'ITMO Portfolio' that stimulates the individual publication rates of students and researchers at ITMO.	Number of publications in Web of Science database per researcher	0,5	1,50	0,55	1,65	1,95	2,45	3,00	3,55
	Number of publications in Scopus database per researcher	0,8	2,26	0,9	2,40	2,66	3,45	4,35	5,31
	Average indicator for citations per researcher, calculated as an aggregate number of all the articles cited	1,0	2,64	1,1	2,93	3,30	3,67	4,03	4,40

	by the Web of Science								
	Average indicator of citations per researcher, calculated as an aggregate number of all the articles cited in Scopus	1,2	3,50	1,3	3,88	4,37	4,85	5,34	5,82
Action 1.2.2. Set of measures with the goal to include ITMO's research publications in international citation databases Scopus and Web of Science	Number of scientific journals of ITMO University listed in the WEB of Science and /or SCOPUS databases	1	1	1	2	2	2	3	3
Action 1.2.3. Development of an open database and open electronic library of ITMO University researchers	Number of full-text research outputs by ITMO researchers	5250	5500	5750	6000	6500	7000	7500	8000
Action 1.2.4 Provision of access to international scientometric resources and full-text databases	Number of international databases that ITMO University has signed agreements with	2	2	2	2	2	2	2	2
Action 1.2.5. Development of the system of patenting of ITMO University's intellectual products abroad.	Number of applications for foreign patents submitted	0	2	0	3	6	7	8	9

Action 1.2.6 Organization of large international conferences.	Number of large international conferences organized.	1	2	2	2	4	5	5	5
Objective 1.3. ITMO – Sustainable research: Ensuring the financial stability of ITMO University's research system.	Million rubles	2	0	0	0	0	0	0	0
Action1.3.1. Non-governmental financing attracted by the scientific R&D projects implemented by the IRCs.	Percentage of the financing from the non-governmental sources raised by the IRCs in comparison to the government financing	0	10	0	15	20	22,5	25	27,5
Action 1.3.2. Increasing the number of contracts from high-tech enterprises, including international ones.	Percentage of the R&D and technological works in general volume of R&DDP	14	28	15	30	32	35	37	40
	Number of the R&D and engineering projects implemented in the University in cooperation with Russian and international high-	11	23	12	26	28	30	32	34

	tech companies, including the ones leading to creation of new departments in the university								
SI 2. Global education: Personal development and professional competitiveness	Million rubles	42,5	60,65	45,4	64,35	112,7	121,8	131,3	139,3
Objective 2.1. ITMO – Talent search: recruitment of talented undergraduate and graduate foreign and home students onto ITMO University educational Programs	Million rubles	8	11	8,5	12,1	21,6	23	24,9	26,9
Action 2.1.1. Organization of international knowledge competitions for perspective Bachelor and Master degree students	Geography of the participants: number of countries participating.	7	10	8	11	11	11	12	12
Action 2.1.2. Development of international centers for professional training and advice; training of young engineering, IT, programming and art talents.	Average USE grade of students accepted to the full-time bachelor and specialist programs with tuition covered by the government funding.	79	79	79	79	79	79	79	79
	Number of international	1	2	2	3	3	4	4	5

	creative centers (progressive total).								
Action 2.1.3. Creation and continuous implementation of the program of grant support for talented Russian and foreign students aimed at attraction of Russian and international students to the international educational programs.	Percentage of the students from the leading universities enrolled in ITMO University in total number of students of ITMO University, %	2,5	4,0	3,0	4,5	5,0	5,5	6,0	7,0
	Percentage of students enrolled in full-time educational programs, receiving financial support in total number of students enrolled in full-time educational programs	15	28	15	28	29	29	30	30
Objective 2.2. ITMO – Unique educational programs: Multi-level system for training of globally competitive specialists	Million rubles	2,1	14,45	2,7	11,35	16	21,5	24,7	27,2
Action 2.2.1. Contest-based selection and implementation of competitive international educational programs, disciplines (modules) for the main curriculum of higher education	Number of the programs of the main curriculum and additional professional	16	26	26	36	43	45	50	57

programs as well as additional professional education programs in priority fields of ITMO University.	education programs implemented in cooperation with leading Russian and/or foreign Universities and/or with Russian or foreign research organizations.								
	Ratio of Master's and PhD degree programs graduates to the Bachelor's and Specialist degree programs graduates, %	58	69	69	78	82	100	102	105
Action 2.2.2 Development and implementation of disciplines (modules) for students of the leading foreign universities within the framework of academic mobility programs, including programs in foreign language.	Percentage of the students from the leading universities enrolled in ITMO University in total number of students of ITMO University, %.	2,5	4,0	3,0	4,5	5,0	5,5	6,0	7,0
Action 2.2.3. Development and implementation of advanced educational programs for Bachelor degree students in partnership with leading Russian and foreign	Number of advanced educational programs for Bachelor degree students in	0	2	2	4	6	9	12	15

universities, including programs in English language.	partnership with leading Russian and foreign universities, including programs in English language (progressive total).								
	Percentage of foreign students enrolled in general educational programs of ITMO University (including students from CIS), %	9,8	10,1	10,1	12,7	14,3	17,0	19,8	21,9
Action 2.2.4. Establishing practice-oriented Master's programs based in a network of innovative departments and high-tech partner companies, both foreign and local	Number of practice-oriented Master's programs based in a network of innovative departments and high-tech partner companies, both foreign and local (progressive total)	1	2	3	4	5	6	7	8
Action 2.2.5. Establishment of the open database of courses, taught by the foreign TRS	Number of modules implemented by the foreign TRS	2	5	4	7	8	10	12	15
Objective 2.3 ITMO – International	Million rubles	1,2	3,3	1	4	6	6,2	7	8

quality management: Ensuring the quality of education in compliance international standards									
Action 2.3.1. Development of effective assessment mechanisms in accordance with international educational standards and accreditation	Number of the educational programs compliant with the international standards	16	5	16	6	19	21	23	25
Action 2.3.2. Implementation of international accreditation of educational services of ITMO University	Number of educational programs possessing international accreditation, (progressive total)	8	12	12	16.	20	24	28	32
Objective 2.4.ITMO – Exceptional experience: Support of an attractive English-language and cultural environment for delivering educational services to a world-class level	Million rubles	22,8	22,8	23,1	24,9	51,1	53,1	55,4	58,5
Action 2.4.1. Ensuring comfortable environment for international students PhDs at ITMO University establishment of a dedicated “Student Admissions Office”	Percentage of foreign students enrolled general educational programs of ITMO University (including students from CIS), %	9,8	10,1	10,1	12,7	14,3	17,0	19,8	21,9

	Percentage of foreign students satisfied with the quality of ITMO University international environment	60	60	70	70	75	80	85	85
Action 2.4.2. Creation and development of adaptation programs for foreign students of ITMO University. Such programs include elements of psychological and social adaptation and communication, Russian language courses, individual educational trajectory building (Center of Foreign Student Training)	Number of foreign students enrolled in adaptation programs.	30	80	50	100	120	150	170	200
	Percentage of foreign students enrolled general educational programs of ITMO University (including students from CIS), %	9,8	10,1	10,1	12,7	14,3	17,0	19,8	21,9
Action 2.4.3. Development of the Foreign TRS Support Center; creation of the comfortable working environment for the foreign TRS.	Percentage of foreign professors, teachers and researchers including Russian	0,6	1,6	0,8	1,7	3,0	4,0	5,4	7,0

	TRS possessing PhD degrees from foreign Universities, in the total number of the ITMO University TRS, %								
Action 2.4.4. Development of the English-language environment based on advanced English-language program for students.	Number of students enrolled in the new English-language program.	250	1700	2000	2500	3500	4800	5000	5500
Action 2.4.5. Enhancement of English-language skills of the TRS, PTS and AMS: development of new English language programs “Business English”, “English for Academics”, “Academic writing”, “Lectures and presentations”	Number of TRS, PTS and AMS enrolled in the new English-language programs	300	300	350	350	400	400	500	600
Action 2.4.6. Creation of comfortable living conditions in the dormitories in order to attract students from the world’s leading universities to study at ITMO University.	Floor space of the premises with comfortable living conditions, sq. m.	50	50	50	50	100	100	100	100
Objective 2.5. ITMO – Open course: Participation in the international and Russian associations of leading universities for open education	Million rubles	7	6	8,5	8,5	13	13	13	13
Action 2.5.1 Introduction of ITMO University’s online courses to the	Number of courses and programs of	0	2	2	4	4	6	6	8

global learning environment	ITMO University integrated into the international online learning environment (progressive total)								
Objective 2.6. ITMO – PhD: Internationalization and development of the PhD programs	Million rubles	1,4	3,1	1,6	3,5	5	5	6,3	5,7
Action 2.6.1. Development and implementation of joint educational PhD programs in partnership with leading Russian and foreign Universities and/or Russian and foreign research organizations	Number of joint educational PhD programs in partnership with Russian and foreign partners (progressive total)	8	10	10	12	14	14	15	15
	Ratio of Master's and PhD degree programs graduates to the Bachelor's and Specialist' degree programs graduates, %	58	69	69	78	82	100	102	105
Action 2.6.2. Broadening the scope for international PhD internship opportunities: implementation of the program "English for research"	Number of abstracts of dissertations, thesis, articles in English, accepted for publication	20	50	70	100	150	200	250	300

Action 2.6.3. Formation of a system of research internships for PhD students	Number of PhD students having completed internships in the foreign research organizations or international high-tech companies while working on their thesis (progressive total)	13	20	22	25	30	35	40	40
SI 3. Creation of a corporate culture and environment that positively impacts on the development of highly professional personnel	Million rubles	101,4	126,6	106,47	133,68	247,3075	263,47	281,64	292,83
Objective 3.1. ITMO – Challenge to Change: the transition from personnel accounting to HR management	Million rubles	85,9	106,1	90,19	112,14	207,68	221,77	237,88	246,99
Action 3.1.1. Establishment of an open system of international recruitment including the program “ITMO Fellowship & Professorship”	Number of staff possessing experience of work in leading Russian and foreign Universities and/or in Russian or foreign research organizations, accepted to the top managing positions	3	5	3	6	10	10	10	10

	at ITMO University								
	Percentage of foreign professors, teachers and researchers, including Russian TRS possessing PhD degrees from foreign Universities, in the total number of the ITMO University TRS, %	0,6	1,6	0,8	1,7	3,0	4,0	5,4	7,0
	Percentage of the young TRS in total number of the TRS of ITMO University	10	12	10	14	26	28	30	32
	Percentage of the young TRS invited to the University, who have experience of work in leading Russian and foreign Universities and/or in Russian or foreign research organizations, in total number of the young TRS of	3	5	4	6	12	15	17	20

	ITMO University								
Action 3.1.2. Development of professional competencies of staff	Percentage of the TRS having participated in academic mobility programs in total number of the TRS of ITMO University	10	20	12	23	35	40	40	45
	Number of academic mobility programs organized by ITMO University, both for the University staff and other organizations	100	160	110	180	300	350	400	450
	Percentage of the intern researchers and young TRS receiving financial support in total number of intern researchers and young TRS	10	40	15	40	60	60	65	65
Action 3.1.3. Forming a system of regular and effective assessments of University departments	Percentage of the main educational, research and administrative university	30	60	70	80	100	100	100	100

	departments having undergone audit (progressive total), %								
	Percentage of the TRS and AMS transferred to efficient employment contracts, excluding those not included into the HR reforms (progressive total), %	60	80	80	85	90	95	100	100
	Number of persons included into the staff reserve waiting list for the top managing positions of ITMO University	70	100	100	120	150	180	200	200
Objective 3.2. ITMO – Partnership and Relationships: development of partner relationships with the University’s stakeholders and diversification of communication channels with target audiences.	Million rubles	15,5	20,5	16,28	21,54	39,63	41,7	43,77	45,84
Action 3.2.1. Developing a system for career-long support of students and	Number of active cooperation	80	100	120	150	200	250	300	400

alumni	contracts for internships, employment of graduates and students with relevant corporations and governmental companies (progressive total)								
	Number of career-guidance and problem-oriented events organized in partnership with relevant corporations and governmental companies	5	10	10	15	30	35	40	45
Action 3.2.2. Establishing a system of collaboration with alumni	Number of ITMO University Alumni Association members,(progressive total)	25	100	125	250	350	450	550	650
	Number of graduates in the database (progressive total)	3000	4000	5000	7000	15000	20000	30000	35000

SI 4. ITMO University global brand-building	Million rubles	33,5	36	33,9	38,9	72	74,5	77,0	80,9
Objective 4.1. ITMO goes global: creating ITMO University's global brand, improving its recognition nationally and globally	Million rubles	24	25,5	24,2	27,1	50	52	54	56,4
Action 4.1.1. participation in large events in order to provide the active promotion of the University's brand among its target groups	Number of official public presentations of ITMO University representatives at large international conventions (progressive total)	4	8	5	9	10	12	14	14
	Number of international events and conventions where ITMO University is present as an exponent (progressive total)	6	10	10	18	10	18	12	20
Action 4.1.2. close cooperation with mass-media and other communication channels in order to broaden the University's information field	Number of publications mentioning ITMO University in Russian and foreign mass media and other information resources	30	40	50	50	120	130	160	200

	(progressive total)								
	Number of comments made by the ITMO University experts for Russian and international mass media concerning relevant aspects of university's activities (progressive total)	10	15	20	20	40	50	55	60
Action 4.1.3. Intensive development of the ITMO University presence in the Internet	ITMO University's position in Webometrics international ranking, position number	1200	900	800	750	700	600	500	300
Action 4.1.4. Science and innovation popularization	Number of joint projects implemented in cooperation with other organizations, promoting science and innovation	1	1	2	2	5	6	7	8
	Number of online-mediums for scientific and	1	2	3	4	5	6	7	8

	research community created (progressive total)								
Action 4.1.5. Information activity aimed at increasing ITMO University's recognition among corporate employers on national and international levels	Number of joint projects with the mass media promoting ITMO University graduates' success stories	2	3	4	6	10	11	12	15
Action 4.2.3. Promotion of the ITMO University's HR-brand	Number of events targeted at Promotion of the ITMO University's HR-brand (progressive total)	3	3	4	4	8	10	11	12
Objective 4.2. IT's MOre than a University: creating and developing the united ITMO University community	Million rubles	9,5	10,5	9,7	11,8	22	22,5	23,5	24,5
Action 4.2.1. Realization of a series of activities targeted at forming ITMO University's corporate culture	Number of events aimed at creation of a united community of ITMO University, broadcasting the University's basic principles and values	3	3	5	5	12	14	16	20

	Involvement of the University community into the corporate information environment, %	32	40	50	60	70	80	90	90
Action 4.2.2. Involvement of external and internal target audiences in University's activities by creation of the open spaces	Number of the new open spaces created for the ITMO University community members, (progressive total)	1	1	2	2	4	5	6	6
	Number of joint events in cooperation with mass media and other partners at ITMO University's own premises	8	15	10	20	40	50	60	70
SI 5. Growth of the Innovation Ecosystem Potential: Knowledge and Technology Transfer	Million rubles	22,7	36,6	21,1	33	61,5	63,5	64,7	65,7
Objective 5.1. ITMO – Innovation Portfolio: Establishment and efficient administration of the University's innovative projects portfolio	Million rubles	11,7	16,4	10,6	16,5	32	33	33,2	33,2
Action 5.1.1. Building partnerships	Number of active	24	26	28	30	30	30	30	30

with infrastructural partners at international level	cooperation agreements in the field of innovations, (progressive total)								
	Number of events organized by ITMO University in partnership with industrial and infrastructural partners	12	13	14	15	15	15	15	15
Action 5.1.2. Implementation of innovative projects in cooperation with representatives of the business community (industry) including foreign companies	Number of functioning SMEs and startup companies	40	40	45	50	55	60	70	70
	Number of SMEs and startup companies with participation of representatives of the business community (industry) including foreign companies	1	3	5	7	9	11	13	15
Action 5.1.3. Establishment of the system of investment and grant support of the innovative and	Size of ITMO University venture foundation, million	0	100	100	600	600	600	600	600

entrepreneurial activities of students and staff including fundraising from partner companies	rubles								
	Volume of financing raised by the SMEs and startup companies from the outside sources, million rubles	10	50	20	60	100	110	120	130
Objective 5.2. ITMO – Entrepreneurial Capacity: enhancement of the business culture and management competencies of the University	Million rubles	11	20,2	10,5	16,5	29,5	30,5	31,5	32,5
Action 5.2.1. Organization of service support for students, staff and third parties with respect to the implementation of their innovation projects	Number of students enrolled in full-time educational programs, receiving service support	50	200	70	300	400	500	600	700
Action 5.2.2. Organization of information and training events in the sphere of innovation and business activity, technological brokerage, social entrepreneurship	Number of participants of the events of innovative focus, including third parties	1000	1000	1000	1500	3000	3500	4000	5000
SI 6. Transformation and development of the university management system	Million rubles	70,575	73,725	78,1	83,2	151,88	171,26	189,15	198,79
Objective 6.1 ITMO – Efficiency:	Million rubles	41,975	37,125	35,4	38,4	53	55,5	58	62,5

Improvement of the administration of the University's organization and increasing its productivity during the University transformation process									
Action 6.1.1 Organization assessment execution, business process optimization in order to improve efficiency	Number of optimized business processes,(progressive total)	2	3	3	4	5	5	5	5
Action 6.1.2 Project management-based operations for the tasks and measures of the Program of Enhancing the Competitiveness of ITMO University	Percentage of staff participating in the implementation of the Program, %	20	25	30	40	55	60	65	70
Action 6.1.3 Upgrading the University information infrastructure including the information system of University management	Number of the IT solutions (Internet and intranet), mobile solutions	1	3	1	3	4	4	4	4
Action 6.1.4 Implementing “shared governance” principles, organizing open forums, and academic, expert and public councils	Percentage of staff included into the decision-making process, %	14	16	18	20	20	20	20	20
	Number of external experts included into the activities of the councils (progressive total)	14	16	20	20	28	34	42	50
Objective 6.2 ITMO – Change	Million rubles	4,6	10,6	8,8	8,9	19,7	20,7	22,7	15

management: Transformation of the University's organizational structure and implementation of systemic change management									
Action 6.2.1. Optimization and development of “service” structure of University management system, ensuring efficiency of the key business processes, i.e. employment of the foreign specialists, welcoming foreign delegations, purchasing logistics, etc.	Number of optimized business processes, (progressive total)	2	3	3	4	5	5	5	5
	Percentage of the AMS having signed the effectiveness-based contracts, %	-	60	80	100	100	100	100	100
Action 6.2.2. Comprehensive transformation of the education and research structure: re-organization of the Departments, creation of Institutes, Academies, establishment of Master’s Chairs in partnership with industry etc.	Number of reorganized and/or newly created educational structures	9	0	0	1	1	2	2	0
	Number of Chairs in partnership with industry established	16	17	18	19	21	23	25	27
Action 6.2.3. Establishment and organization of activities of the network-based Russian-Chinese university	Percentage of the students from the leading universities enrolled in ITMO	2,5	4,0	3,0	4,5	5,0	5,5	6,0	7,0

	University in total number of students of ITMO University, %								
Action 6.2.4. Launching and operation of ITMO University's Representative offices abroad	Number of ITMO University's Representative offices abroad established (progressive total)	1	2	2	2	3	3	3	3
	Number of events organized while launching of the ITMO University's Representative offices abroad	2	2	2	2	5	7	8	8
Objective 6.3. ITMO – Transparency: Development system for financial self-sufficiency, proficiency and transparency	Million rubles	9	9	9,9	9,9	21,78	23,96	26,35	28,99
Action 6.3.1 Management of implementation of the financial and economic model of ITMO University's development; financial and economic provision of the Program implementation	Percentage of income from external non-government sources in University's income structure, %	28	28	28,5	28,5	29	29,5	30	30,5
	Total income of the University from all	1,8	2,2	1,8	2,3	4,2	4,3	4,4	4,5

	financing sources per 1 TRS; millions of rubles per person								
	Percentage of co-funding within the Program (including free tangible and intangible assets transferred to the University, free works and services rendered), in the governmental financing of the Program, %	5	5	5	5	10	10	10	10
Action 6.3.2. Centralized resource management system (without distribution of resources among structural units)	Percentage of the university structures having independent budgets, in the total number of these structures, (progressive total), %	15	19	25	30	35	40	45	50
	Number of educational programs and substantial research projects with result-oriented budgeting	30	35	40	45	50	50	50	50

	(progressive total)								
Action 6.3.3. Development and implementation of the IFRS	Number of the University staff having additional professional education in the IFRS field (progressive total)	1	2	3	4	6	8	10	12
	Audit of the last financial year's standing according to the IFRS (yes/no)	yes		yes		yes	yes	yes	yes
Action 6.3.4. Improvement of the purchasing logistics and procurement systems	Number of the bulk purchases of goods and services (according to the all-Russian classification) that have been professionally organized on a turnkey basis (progressive total)	1	2	3	4	6	8	10	12
Action 6.3.5. Monitoring of the efficiency of use of the university resources	Number of departments of ITMO University compliant with the requirements of	2	3	2	3	6	7	8	9

	efficient budgets, premises and equipment use according to the control analysis.								
Objective 6.4 ITMO – Cutting-Edge projects: the initiation and realization of comprehensive strategic projects in priority directions	Million rubles	15	17	24	26	57,4	71,1	82,1	92,3
Action 6.4.1 Implementation of the comprehensive technological initiatives project in order for ITMO University to become the part of national system of technological initiatives.	Percentage of the TRS of the University involved in the implementation of technological initiatives, %	5	6	15	20	25	30	40	45
Action 6.4.2 Implementation of the strategic project of “Establishment of the Innograd of science and technology” on the premises of the satellite city “Yuzhnyi” in Pushkin administrative district of Saint Petersburg	Signing of the agreement of participation in the project of “Foundation of the Innograd of Science and Technology”	yes							
	“Innograd of Science and Technology” concept approval		yes						
	Construction of the					yes	yes	yes	yes

	facilities of the “Innograd of Science and Technology”								
Action 6.4.3 Establishment and development of the ‘International Technological Cluster ‘IT, Communications and Optics in Culture and Art’	Number of projects implemented in partnership with industry	0	3	3	6	6	7	7	9
	Amount of funding raised by the projects of the Cluster, million rubles	0	15	15	30	50	55	60	100
Action 6.4.4 «Foundation and development of the city prognostic cluster»	Number of joint projects / organized events	1	1	1	2	3	3	4	5
Total volume of financing	Million rubles	618,675	678,575	667,17	735,03	1410,89	1485,63	1555,9	1615,32

3. Appendices

Appendix 1. Subsidized funding

Subsidized funding

Goals in accordance with the resolution № 211/Objectives	Funding		
	Total (2015–2020 years)	2015	2016
Goal №1 «Measures of forming a staff reserve waiting list for the top managing positions at ITMO University to be filled with professionals possessing experience of work in leading Russian and foreign Universities and/or in Russian or foreign research organizations»	578,45	99,35	104,82
Objective 3.1. ITMO – Challenge to Change: the transition from personnel accounting to HR management	170,22	25,3	26,520
Objective 4.1. ITMO goes global: creating ITMO University's global brand, improving its recognition nationally and globally	10	2	2
Objective 6.1. ITMO – Efficiency: Improvement of the administration of the University's organization and increasing its productivity during the University transformation process	178,65	42,85	42,8
Objective 6.2. ITMO – Change management: Transformation of the University's organizational structure and implementation of systemic change management	79,7	11,2	13,7
Objective 6.3. ITMO – Transparency: Development system for financial self-sufficiency, proficiency and transparency	138,88	18	19,8
Goal №2 «Measures of recruiting of the young TRS possessing experience of work in leading Russian and foreign Universities and/or in Russian or foreign	877,93	125,8	114,11

research organizations»			
Objective 1.2. 'ITMO – Publications: Increasing ITMO University's publication rate and improving the quality of the University's ' intellectual product'	327,3	42	52,3
Objective 2.4. ITMO – Exceptional experience: Support of an attractive English-language and cultural environment for delivering educational services to a world-class level	10,5	1,6	1,6
Objective 3.1. ITMO – Challenge to Change: the transition from personnel accounting to HR management	460,13	71,2	50,01
Objective 4.1. ITMO goes global: creating ITMO University's global brand, improving its recognition nationally and globally	29	4,5	4,7
Objective 4.2. IT's MOre than a University: creating and developing the united ITMO University community	12,5	2	2
Objective 6.2. ITMO – Change management: Transformation of the University's organizational structure and implementation of systemic change management	27	2	2
Objective 6.4. ITMO – Cutting-Edge projects: the initiation and realization of comprehensive strategic projects in priority directions	11,5	2,5	1,5
Goal №3 «Measures of organization of international or national academic mobility programs, internships, additional qualification or retraining programs for the TRS»	324,56	44,36	73
Objective 3.1. ITMO – Challenge to Change: the transition from personnel accounting to HR management	274,86	36,46	65,3
Objective 5.2. ITMO –	9	1,5	1,5

Entrepreneurial Capacity: enhancement of the business culture and management competencies of the University			
Objective 6.1. ITMO – Efficiency: Improvement of the administration of the University's organization and increasing its productivity during the University transformation process	26,4	5,4	4
Objective 6.4. ITMO – Cutting-Edge projects: the initiation and realization of comprehensive strategic projects in priority directions	14,3	1	2,2
Goal №4 «Measures of improvement of PhD and Doctorate programs»	203,63	30,04	31,65
Objective 2.6. ITMO – PhD: Internationalization and development of the PhD programs	26,6	4	4,3
Objective 3.1. ITMO – Challenge to Change: the transition from personnel accounting to HR management	177,03	26,04	27,35
Goal№5 «Measures of support for students, PhD students, interns and young TRS»	825,26	125,4	125,62
Objective 1.2. 'ITMO – Publications: Increasing ITMO University's publication rate and improving the quality of the University's ' intellectual product'	66	10	10,9
Objective 3.2. ITMO – Partnership and Relationships: development of partner relationships with the University's stakeholders and diversification of communication channels with target audiences.	244,76	36	37,82
Objective 4.2. IT's MOre than a University: creating and developing the united ITMO University community	63	10	10
Objective 5.1. ITMO – Innovation Portfolio: Establishment and efficient administration of the	104,2	16,1	14,1

University's innovative projects portfolio			
Objective 5.2. ITMO – Entrepreneurial Capacity: enhancement of the business culture and management competencies of the University	72,2	12,7	9,5
Objective 6.1. ITMO – Efficiency: Improvement of the administration of the University's organization and increasing its productivity during the University transformation process	88,6	13,6	13
Objective 6.2. ITMO – Change management: Transformation of the University's organizational structure and implementation of systemic change management	10	0	2
Objective 6.4. ITMO – Cutting-Edge projects: the initiation and realization of comprehensive strategic projects in priority directions	176,5	27	28,3
Goal №6 «Introduction of the new educational programs in partnership with leading foreign and Russian universities and research organizations»	505,2	77,65	74,25
Objective 2.2. ITMO – Unique educational programs: Multi-level system for training of globally competitive specialists	62,7	10,35	7,35
Objective 2.3. ITMO – International quality management: Ensuring the quality of education in compliance international standards	36,7	4,5	5
Objective 2.4. ITMO – Exceptional experience: Support of an attractive English-language and cultural environment for delivering educational services to a world-class level	131,3	20,8	21,4
Objective 3.1. ITMO – Challenge to Change: the transition from personnel accounting to HR management	205	30	30

Objective 4.1. ITMO goes global: creating ITMO University's global brand, improving its recognition nationally and globally	67,5	10	10,5
Objective 6.2. ITMO – Change management: Transformation of the University's organizational structure and implementation of systemic change management	2	2	0
Goal №7 «Measures of recruiting students from leading foreign universities for studying in Russian universities, also by the means of joint educational programs in partnership with foreign universities and educational associations»	699,7	98,4	109,6
Objective 2.1. ITMO – Talent search: recruitment of talented undergraduate and graduate foreign and home students onto ITMO University educational Programs	136	19	20,6
Objective 2.2. ITMO – Unique educational programs: Multi-level system for training of globally competitive specialists	46,1	4,2	5,4
Objective 2.4. ITMO – Exceptional experience: Support of an attractive English-language and cultural environment for delivering educational services to a world-class level	169,9	23,2	25
Objective 2.5. ITMO – Open course: Participation in the international and Russian associations of leading universities for open education	66	11	15
Objective 4.1. ITMO goes global: creating ITMO University's global brand, improving its recognition nationally and globally	206,7	33	34,1
Objective 4.2. IT's MOre than a University: creating and developing the united ITMO University community	58	8	9,5
Objective 6.4. ITMO – Cutting-	17	0	0

Edge projects: the initiation and realization of comprehensive strategic projects in priority directions			
Goal №8 «Implementation of the R&D projects in accordance with the long-term Program for fundamental research in Universities of the Russian Federation and also in correspondence with the international priority fields of fundamental and applied research; in partnership with the leading Russian and foreign scientists and/or in cooperation with perspective research organizations, including partnerships leading to creation of new departments in the universities»	3934,75	592,45	645,3
Objective 1.1. “ITMO Research”: Research in IT and Photonics under joint leadership by foreign and Russian scientists and/or promising scientific organizations, through foundation of the new IRCs.”	3870	580	636
Objective 1.2. ‘ITMO – Publications: Increasing ITMO University’s publication rate and improving the quality of the University’s ‘ intellectual product’	11,3	1	1,3
Objective 1.3. ITMO – Sustainable research: Ensuring the financial stability of ITMO University’s research system.	2	2	0
Objective 6.1. ITMO – Efficiency: Improvement of the administration of the University's organization and increasing its productivity during the University transformation process	51,45	9,45	8
Goal № 9 «Implementation of the R&DDP in accordance with the long-term Program for fundamental research in	36,8	7,8	6

Universities of the Russian Federation and also in correspondence with the international priority fields of fundamental and applied research; In partnership with the leading Russian and foreign high-tech companies, including partnerships leading to creation of new departments in the universities»			
Objective 6.1. ITMO – Efficiency: Improvement of the administration of the University's organization and increasing its productivity during the University transformation process	36,8	7,8	6

Appendix 2. Consolidated table of funding needs

Consolidated funding needs

Strategic initiatives/Objectives	Volume of funding (2015–2020)		Volume of funding in 2015		Volume of funding in 2016	
	Total	Including the subsidy	Total	Including the subsidy	Total	Including the subsidy
SI 1 - Securing the world-class level of scientific research and development projects in the fields of IT and photonics	4663,6	4276,6	693	635	764,1	700,5
Objective 1.1. “ITMO Research”: Research in IT and Photonics under joint leadership by foreign and Russian scientists and/or promising scientific organizations, through foundation of the new IRCs.”	4257	3870	638	580	699,6	636
Objective 1.2. ‘ITMO – Publications: Increasing ITMO University’s publication rate and improving the quality of the University’s ‘intellectual product’	404,6	404,6	53	53	64,5	64,5
Objective 1.3. ITMO – Sustainable research: Ensuring the financial stability of ITMO University’s research system.	2	2	2	2	0	0
SI 2. Global education: Personal development and professional competitiveness	718	685,8	103,15	98,65	109,75	105,65
Objective 2.1. ITMO	136	136	19	19	20,6	20,6

– Talent search: recruitment of talented undergraduate and graduate foreign and home students onto ITMO University educational Programs						
Objective 2.2. ITMO – Unique educational programs: Multi-level system for training of globally competitive specialists	120	108,8	16,55	14,55	14,05	12,75
Objective 2.3 ITMO – International quality management: Ensuring the quality of education in compliance international standards	36,7	36,7	4,5	4,5	5	5
Objective 2.4. ITMO – Exceptional experience: Support of an attractive English-language and cultural environment for delivering educational services to a world-class level	311,7	311,7	45,6	45,6	48	48
Objective 2.5. ITMO – Open course: Participation in the international and Russian associations of leading universities for open education	82	66	13	11	17	15
Objective 2.6. ITMO – PhD: Internationalization and development of the PhD programs	31,6	26,6	4,5	4	5,1	4,3
SI 3. Creation of a corporate culture and	1553,4 1	1533	228	225	240,1 5	237

environment that positively impacts on the development of highly professional personnel						
Objective 3.1. ITMO – Challenge to Change: the transition from personnel accounting to HR management	1308,6 5	1288,24	192	189	202,3 3	199,18
Objective 3.2. ITMO – Partnership and Relationships: development of partner relationships with the University's stakeholders and diversification of communication channels with target audiences	244,76	244,76	36	36	37,82	37,82
SI 4. ITMO University global brand-building	446,7	446,7	69,5	69,5	72,8	72,8
Objective 4.1. ITMO goes global: creating ITMO University's global brand, improving its recognition nationally and globally	313,2	313,2	49,5	49,5	51,3	51,3
Objective 4.2. IT's MOre than a University: creating and developing the united ITMO University community	133,5	133,5	20	20	21,5	21,5
SI 5. Growth of the Innovation Ecosystem Potential: Knowledge and Technology Transfer	368,8	185,4	59,3	30,3	54,1	25,1
Objective 5.1. ITMO – Innovation	186,6	104,2	28,1	16,1	27,1	14,1

Portfolio: Establishment and efficient administration of the University's innovative projects portfolio						
Objective 5.2. ITMO – Entrepreneurial Capacity: enhancement of the business culture and management competencies of the University	182,2	81,2	31,2	14,2	27	11
SI 6. Transformation and development of the university management system	1016,68	851,08	144,3	142,8	161,3	143,3
Objective 6.1 ITMO – Efficiency: Improvement of the administration of the University's organization and increasing its productivity during the University transformation process	381,9	381,9	79,1	79,1	73,8	73,8
Objective 6.2 ITMO – Change management: Transformation of the University's organizational structure and implementation of systemic change management	111	111	15,2	15,2	17,7	17,7
Objective 6.3. ITMO – Transparency: Development system for financial self-sufficiency,	138,88	138,88	18	18	19,8	19,8

proficiency and transparency						
Objective 6.4 ITMO – Cutting-Edge projects: the initiation and realization of comprehensive strategic projects in priority directions	384,9	219,3	32	30,5	50	32
Total volume of funding	8767,19	7978,58	1297,25	1201,25	1402,2	1284,35

Appendix 3. Performance indicators, calculated according to the individual methods

This Appendix demonstrates the dynamics of the performance indicators, calculated according to the individual methods, adopted by ITMO University when formulating the targets of the Program for Enhancing the Competitiveness and the Roadmap of the first stage of the Program.

Target indicators										
№	Indicator name		Predicted dynamics of the indicators							
		Units	2013	2014	2015	2016	2017	2018	2019	2020
1.	Position (rounded to nearest 50) in global ratings, place (in the institutional list and in specific subject lists)									
	Position in QS World University Rankings	Position	500+	346	286	257	228	199	185	171
	Position in Times Higher Education	Position	n/a	331	302	294	286	273	265	257
	Position in subject ranking of QS «Computer Science & Information Systems»	Position	500+	266	206	177	148	119	105	91
	Position in subject ranking of QS «Material Science»	Position	500+	376	316	287	258	229	215	201
2.	Number of articles in Web of Science and Scopus (per researcher, repetitions excluded)	Number	0,3	0,35	0,5	0,8	1,0	1,3	1,6	2,0
3.	Average indicator of citations per one researcher, calculated as an aggregate number of all the articles cited in the Web of Science and Scopus, repetitions excluded	Number	0,65	0,7	0,9	1,3	1,7	2,1	2,5	3,0
4.	Percentage of foreign professors, teachers and researchers in the total number of this type of faculty, including Russian specialists possessing a PhD from foreign universities	%	0,2	0,7	1,3	1,9	2,6	3,3	4,1	5
5.	Percentage of foreign students enrolled on general educational programs of ITMO University (including students from CIS)	%	7,5	9,2	10,1	12,7	14,3	17,0	19,8	21,9
6.	Average USE grade for the students of ITMO	Grade	75,7	75,8	75,9	76,0	76,1	76,2	76,3	76,4

Target indicators										
№	Indicator name		Predicted dynamics of the indicators							
	University enrolled on general educational programs with tuition and fees covered by the State, including Bachelor and Specialist programs									
7.	Percentage of external revenue generated from non-government sources in the total university turnover	%	62,0	65,2	68,2	70,9	73,4	75,6	77,6	79,6
Additional indicators										
1.	Ratio of Master's and PhD degree graduates to Bachelor and Specialist degree graduates (for full-time students)	%	50	51	69	78	82	100	102	105
2.	Percentage of income from R&D projects in ITMO University's turnover	%	30	32	36	40	43	46	48	48

Appendix 4. Methods of calculation of additional performance indicators

#	Performance indicator	Method description	Source of information	Example of calculation (based on 2014 data)
1.	Ratio of Master's and PhD degree graduates to the Bachelor's and Specialist degree graduates	The index is calculated as follows: $(M+Pg)/(B+S)*100\%$, there M – master's graduates/alumni, full time course of the last year, people Pg - postgraduates graduates/alumni, full time course of the last year, people B – bachelor's graduates/alumni, full time course of the last year, people S-specialists graduates/alumni, full time course of the last year, people	Source – Form of Statistic report VO-1	Full-time masters graduates class reached 928 students in June 2014 Full-time masters graduates class reached 1040 students in June 2014 Full-time bachelors graduates class reached 745 students in June 2014 Full-time postgraduates class reached 153 students in June 2014 $(M+Pg)/(B+S)*100\%, = (928+153)/(745+1040)*100=60,5\%$
2.	Percentage of income from R&D projects in ITMO University's turnover	The index is calculated as follows: $R(R\&D)/\Delta(\text{Sum})*100\%=\Sigma r_i/R(\text{Sum})*100\%$, R(Sum) – total University revenue from all sources, mln rubles: cash and equity, including equity rights transferred to the University last year R(R&D)= cash-flow received for R&D projects and received from R&D output as a sum of R _i cash-flow from: R1 – subsidies for R&D on state orders, mln rubles	Science Activity Report for 2014	R1= 504,568 mln rubles – R&D subsidies (according state order, from own sources, from FTP “Research and development in priority directions of science and technology sector in Russia for 2014-2020” R2 - 670,770 mln rubles – from subsidies for other R&D objectives (grants according RF Government Regulation #220, grants of RF President, Program

		<p>R2 – subsidies for other objectives, including R&D for federal and industrial programs and grants, mln rubles</p> <p>R3 – cash-flow from non-governmental sources for R&D on corporate and individual orders, mln rubles</p> <p>R4 – cash-flow according to service contracts for R&D, mln rubles</p> <p>R5 – cashflow according to contracts for development and delivery of high-tech production</p> <p>R6 -grants for R&D from corporate and individual sources, mln rubles</p> <p>R7 – intellectual property value gained from R&D, mln rubles</p> <p>R8- revenue from licensing agreements and alienation agreements for R&D intellectual output</p>		<p>of raising the competitiveness of the leading Russian Universities)</p> <p>R3 = 102,345 mln rubles – cash-flow from non-governmental sources for R&D on corporate and individual orders</p> <p>R4 =14,090 mln rubles cash-flow according service contracts for R&D</p> <p>R5=586,424 mln rubles - cash-flow according contracts for development and delivery of high-tech production for individual and corporate orders:</p> <p>R6=132,115 mln rubles – grants for R&D from corporate and individual sources (RGGR,RSF, RHF, sub-federal units, local and foreign grants);</p> <p>R7=0,157 mln rubles – intellectual property value gained from R&D, mln rubles;</p> <p>R8=0,030 mln rubles – revenue from licensing agreements and alienation agreements for R&D intellectual output;</p> <p>$\Sigma R_i=2010,499$ mln rubles.</p>
--	--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Appendix 5. Changes in the Target Model of the University

Changes in the Target Model of the University

Element of the Target Model	Previous Edition	New Edition	Justification of changes
1.2 Target model of the University	1.2. Target model of the NRU ITMO 1.2.1. Research Activity 1.2.2. Education Activity 1.2.3. HR Activity 1.2.4. Communication Activity 1.2.5. Innovation and Entrepreneurship Activity 1.2.6. University Management	1.2. Target model of the ITMO University 1.2.1. ITMO University Mission 1.2.1.1. Mission Statement 1.2.1.2. ITMO University in 2020 1.2.1.3. Competitive advantages of ITMO University 1.2.2. The Benchmark Group of the world's leading research and educational institutions 1.2.3. Marketing Strategy 1.2.3.1. Marketing strategy for the R&D Market 1.2.3.2. Marketing Strategy for Student Admissions 1.2.3.3. Marketing Strategy for the Labor Market 1.2.4. Information Infrastructure of the University 1.2.5. Human Resources of the University, including Top Management, PTS and TRS 1.2.6. The Future Features of ITMO University's infrastructure and facilities 1.2.7. Economic and financial model	<p>The target model of ITMO University of 2014 Roadmap contained characteristics of the main goals to be reached by 2020 in six directions: research, education, HR, communications, innovations and management.</p> <p>Supporting resources for this target model (such as informational infrastructure, HR potential, facilities and resources and others) were included into the six main components (See Column 2).</p> <p>In accordance with the methodological recommendations to the Roadmap of the second edition, the structure of the target model is clearly articulated, all the components are emphasized.(See column 3)</p>



Targets 2020

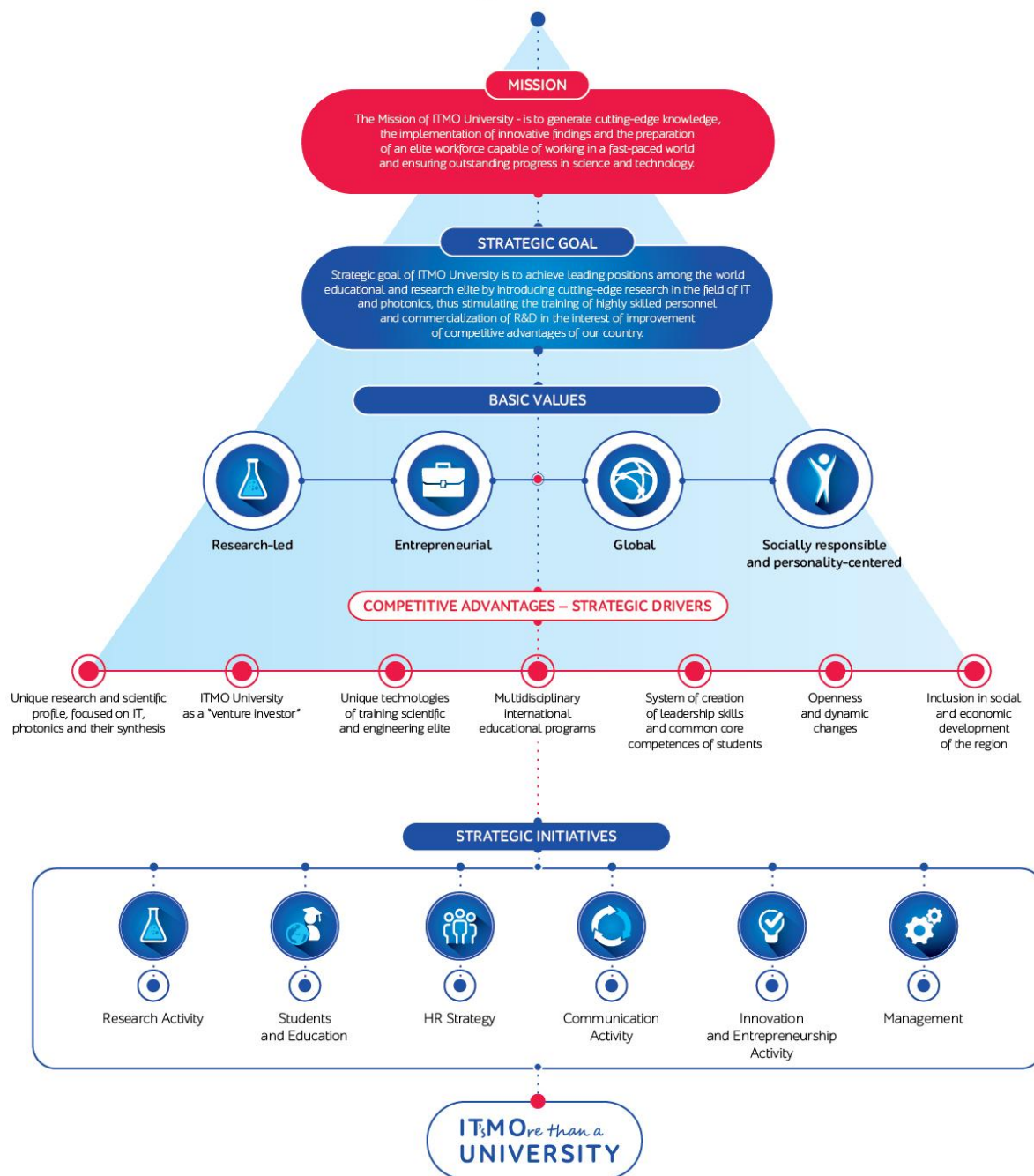


Illustration 1. ITMO University in 2020

Appendix 7. Priority Research Fronts of ITMO University

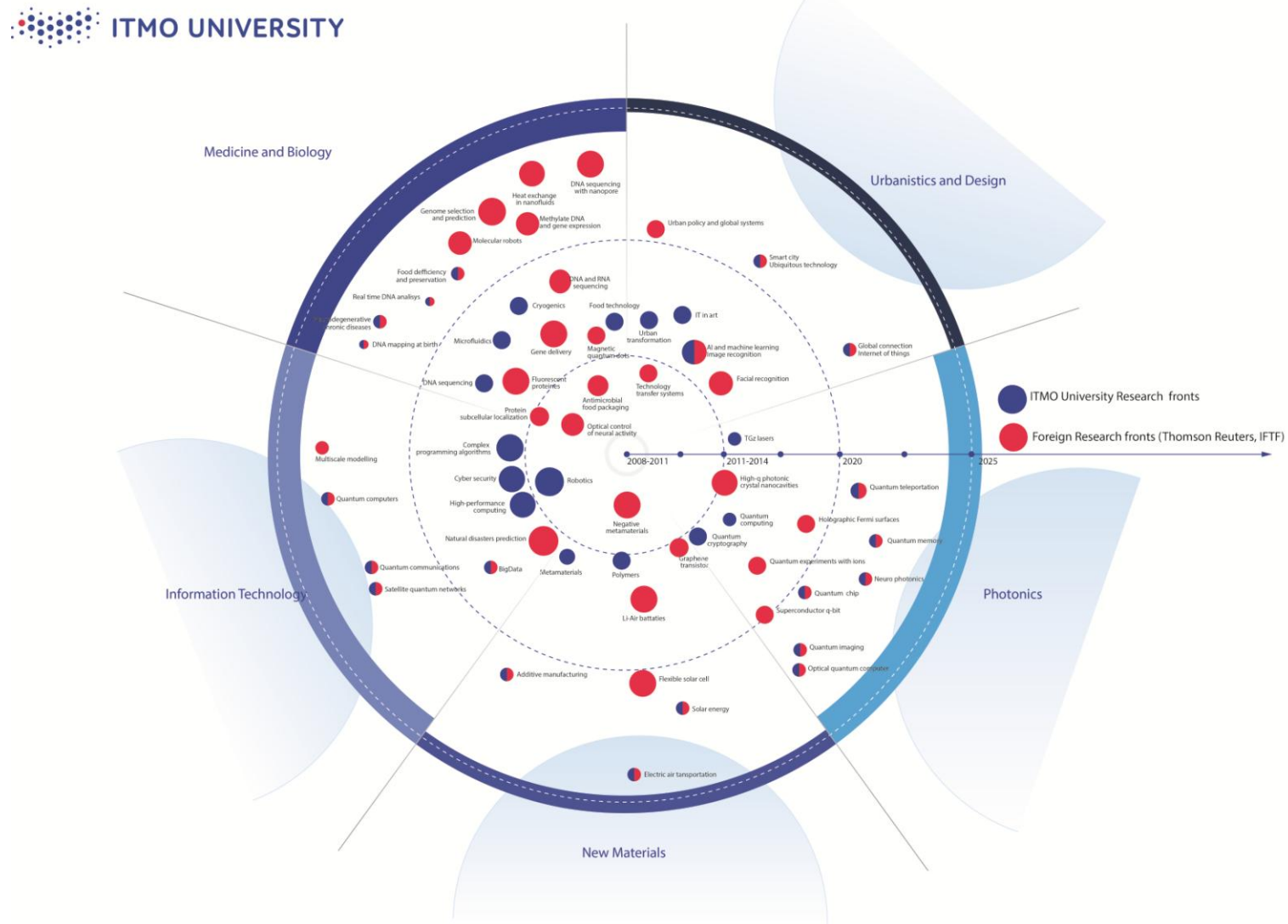


Illustration 2. Priority Research Fronts of ITMO University

Appendix 8. Institute of Translational Medicine

The Institute of Translational Medicine (ITM) is being created in 2015 in partnership with the Almazov Federal Medical Research Center. The decision to launch ITM was taken by ITMO University Academic Council in December 2014.

The goal of ITM is the development of a competitive medical and technological line of enquiry for solving complex multidisciplinary tasks.

One of ITM objectives is nurturing international collaboration in the medical and technological lines of enquiry, boosting the quality of interdisciplinary research and the diversification of research and educational programs.

The launch of ITM will form a new “growth hot-spot” for one of the promising cutting-edge lines of enquiry involving collaboration between ITMO University and medical and biological facilities - forming a joint network structure of ITM.

Prospective directions for multidisciplinary projects at ITM include the following areas:

- *Bioinformatics and IT-medicine:* OMIC’S: genomics, transcriptomics, proteomics, metabolomics. Molecular medicine, modern biology, pharmacology, individualized medicine, genetics and genetic engineering, genomic medicine, the processing of large volumes of medical data, cognitive technologies, telemedicine technology, automated analysis of bio-signals and information safety in medicine;
- *Medical equipment:* Modern medical equipment, sensors and electronics, medical equipment, cryogenic, bioelectric signals;
- *Nanomaterials in biology and medicine:* Chemistry, drug delivery to the organs, wound-healing agents, pharmacology, metamaterials, biomarkers, hybrid nanostructures, quantum dots, materials;
- *Mathematical medicine and biology, biomechanics and biophysics:* Mathematical models of disease and treatment, cardiology, endocrinology, mathematical modeling of biological processes, orthopedics, cardiology, traumatology, prosthetics, mechanical properties of living systems based on models and methods of mechanics, bionics;

- *Radiation medicine and biophotonics, bio and medical lasers*: THz radiation imaging, regenerative medicine, neuroscience, biomedical diagnostics. Cardiovascular therapy and surgery, oncology, functional and regenerative medicine, cosmetology, ophthalmology;
- *Life Science (biotechnologies and nutrition)*: Healthy food, biotechnology solutions for health, human environment, cryomedicine, socially important medical projects, diagnostic, vaccines.

ITM's development plans in 2015 are:

- Selecting a list of priority projects and programs on a competitive basis (in February 2015);
- Launching pilot project-oriented educational programs for ITMO and Almazov Center graduate students (in September 2015);
- Organizing an international scientific symposium focused on positioning the ITM in the professional community and aimed at the promotion and implementation (commercialization) of cutting-edge research on the convergence of medicine and technology for the focus and synergy of research groups with leading international Research and Development in the field of medical and hi-end biotechnology.

ITM Structure (see flowchart):

- ITMO Coordinating Council – the main supervisory body headed by the director of the Almazov Center and the Rector of ITMO University;
- ITM Director – deputy research director of the Almazov Center;
- ITM heads of research areas (programs, projects) – representatives from various medical and technological fields
- ITM Academic Council;
- Scientific seminar ‘Modern Medical and Bio Technologies’ aimed at discussing the results of ITM current activities, setting of research goals, setting new challenges (which takes place one-two times per month and consists of ITMO and Almazov Center staff and invited medical specialists and experts);
- Graduate academic section responsible for educational processes.

ITM Management Structure

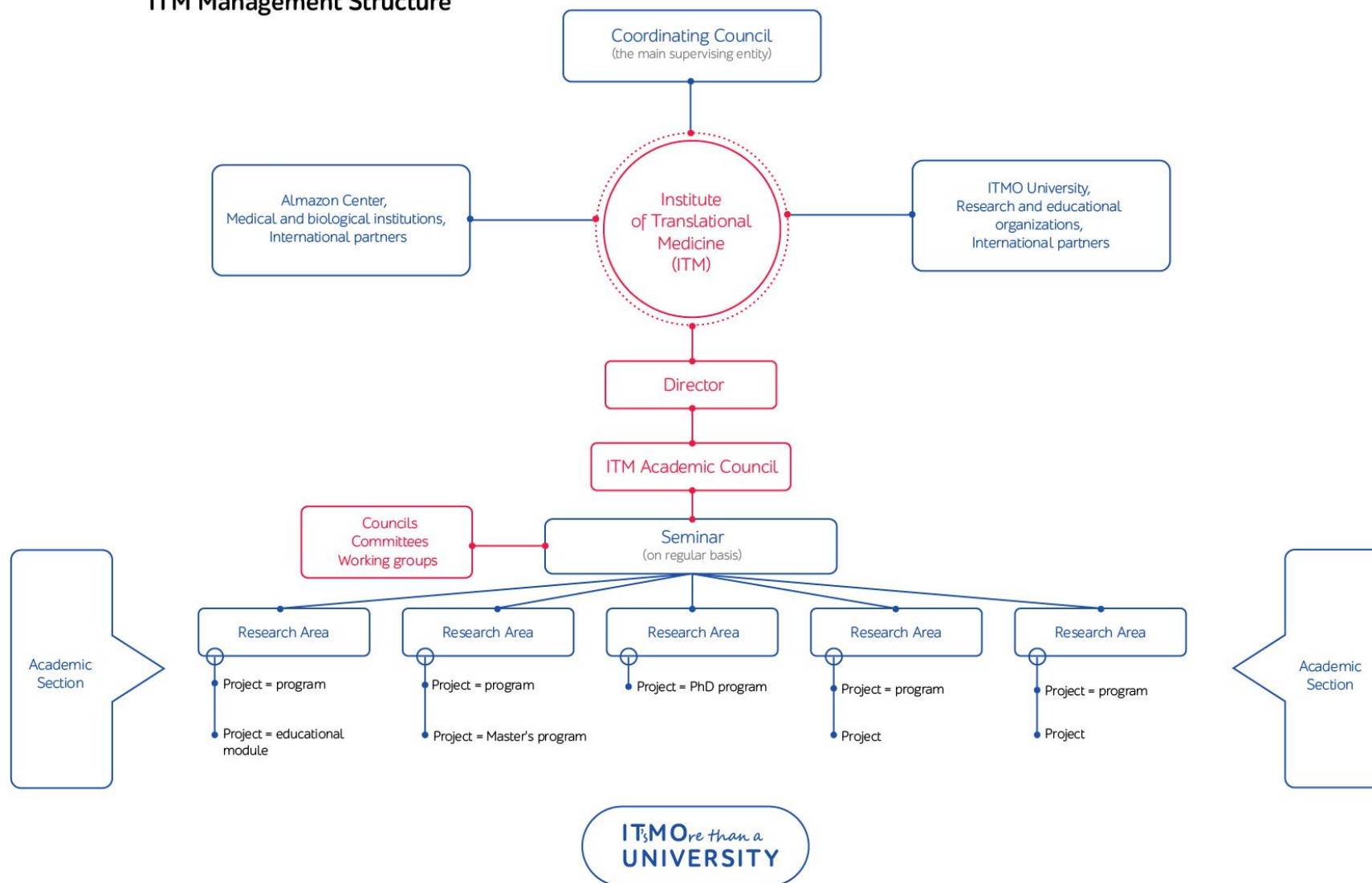


Illustration 3: ITM Management Structure

Appendix 9. The Institute of Design and Urban Studies

The Institute of Design and Urban Studies (IDU) will be launched in 2015 in cooperation with the its core partner, St. Petersburg State Academy of Fine Arts named after A.L.Shtiglitz. The decision to establish the IDU was approved by the Academic Council of ITMO University on December 2014.

The main aim of IDU in its role as an international academic center consists in the promotion of innovation approaches to the transformation of cities and human-oriented design, as well as the development of business education in the dynamics of cities, services and ecosystems.

The Institute of Design and Urban Studies is focused on forming a robust partnership network with international organizations from different cities of the world, business representatives, public and professional organizations and city agencies. The Institute of Design and Urban Studies has an education framework based on multidisciplinary experience, which is usually not available in traditional academic disciplines.

Master's degrees are being formed in the multidisciplinary field of Urban Studies, design and cutting edge technological solutions.

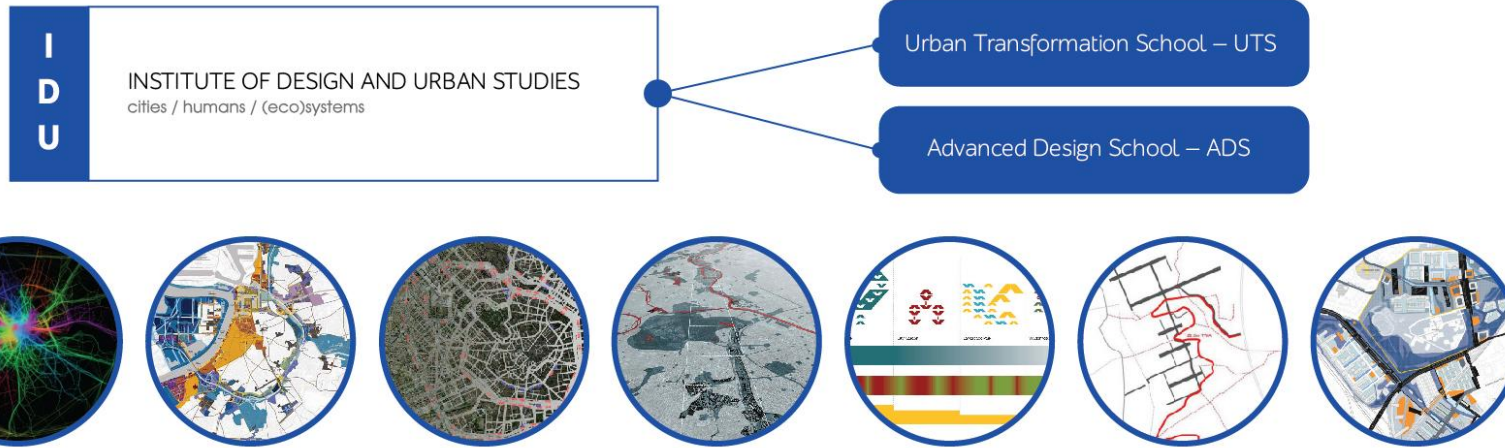
The IDU programs are innovative both in terms of their interactive form of communication between faculty and students; and in their research lines of enquiry.

There are two schools in the structure of the Institute of Design and Urbanistics:

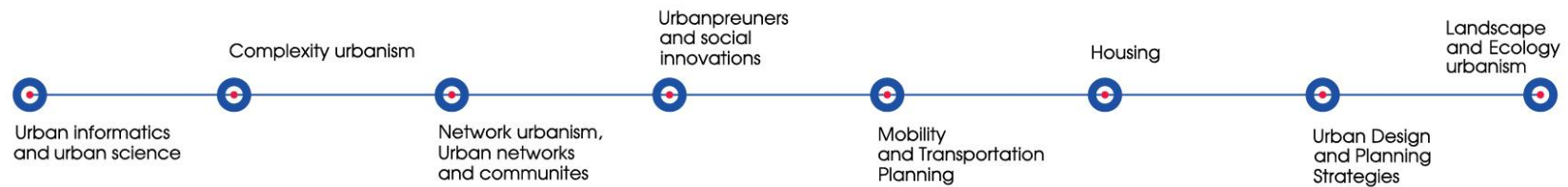
- Urban Transformations School — UTS;
- Advanced Design School — ADS.

The IDU will carry out research studies with the following lines of enquiry:

- Urban informatics and urban science;
- Complex urbanism;
- Network urbanism, Urban networks and communities;
- 'Urbanpreneurs' and social innovation;
- Mobility and Transport Planning;
- Housing;
- Urban Design and Planning Strategies;
- Landscape and Ecology urbanism.



Fields of Applied and Fundamental Research Projects



Partners



Illustration 4: Institute of Design and Urban Studies

Appendix 10. The “World of Science” in “Lakhta-Center”

The ‘World of Science’ is part of ‘Lakhta-Center’, which is a joint project between the City of St. Petersburg, the Gas company Gazprom and ITMO University.

The mission of the project is investment in the new generation and development of the future human resources potential for reorienting the economy of St. Petersburg towards high tech, science and education.

The goal of the project is the popularization of science, involvement of children in research and innovation, early professional orientation, the demonstration of real-world applications of high-tech inventions and the demand for them by industry and society, presenting career opportunities in science.

The importance of the project stems from the need to find new innovative forms of attracting young people to creative technologies and promoting education in high-tech and scientific fields. The global tendencies point towards a shift in realizing the need for motivation and support of creativity in technology for students. All the leading and most of the developed, countries have large centers of science and technology and national networks of specialized interactive exploratoriums.

Considering that, it makes sense to create a single organization that would encompass two parts equally in demand: the Science Discovery Center for pre-school students with parents, elementary and middle school students, and the Science and Education Center for high school students, entrants to technical colleges, and participants in educational programs.

Along with its own educational activity, the new organization will become a coordinating hub for a network of interactive museums for children of different ages. Starting in 2018, the World of Science will welcome over 500,000 visitors annually and coordinate the work for introducing young people to science and technology in St. Petersburg and the Northwestern Region.

It will be based on themed interactive collections, stands and simulators, hands-on scientific zones, labs by tech universities, a hall of spherical projections, media library, center for robotics, scientific theater, etc., with a total area of no less than 10,000 sq. m.

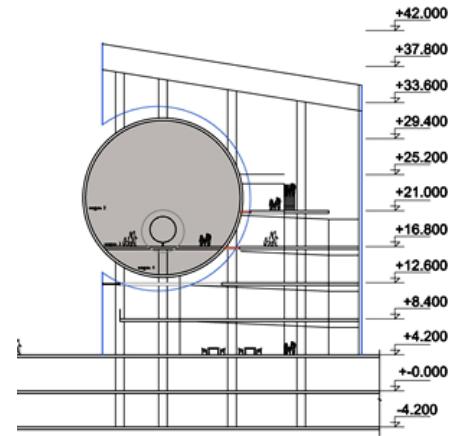
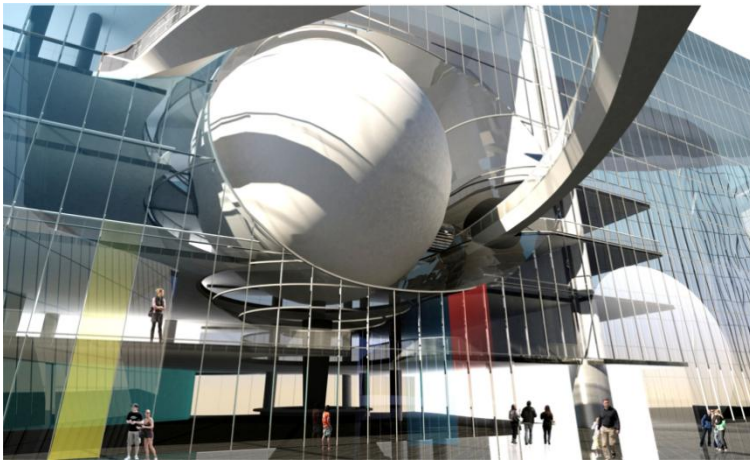


Illustration 5: Design project of the “World of Science” in “Lakhta-Center”

Appendix 11. Organization of Venture (Seedcorn) Foundation

The Venture Foundation, managed as a daughter company of ITMO University (hereafter referred as ‘Foundation’) will be established in 2015 by ITMO University and will act as the financial vehicle for the commercialization of R&D results in combination with such non-financial instruments like accelerator programs like ‘Future Technologies – ITMO’, SUMIT, CEO Camp, engineering center, business incubator and ITMO Technology Park.

The Foundation targets are as follows:

- diversification of sources of funding for the projects at the University;
- effective management of the portfolio - intellectual property performance results, projects and companies with a University interest;
- encouraging the commercialization of IP and development of the ITMO University circle of small hi-tech businesses.

Investment priorities are the following:

- health care (medical instruments engineering, creating of medical diagnostics and therapeutic devices, hard- and software for social adaptation of handicapped and senior people, medical materials, IT in health care);
- protection of the living environment (alternative energy and effective energy conversion and utilization, energy-saving materials and devices, industrial and sanitary sewage treatment, waste recycling, biodegradable materials, life and health safety systems, etc);
- advanced manufacturing and M2M (manufacturing robotics and automation technologies, laser, plasma, ultrasonic, x-ray and optic technologies, state-of-art flap technologies, digital processing, advanced systems for information processing and transferring, M2M technologies in transport, utilities, monitoring and safety systems).

The Foundation’s funds will reach 100M rubles in 2015 and will exceed 600 M Rubles in 2020.

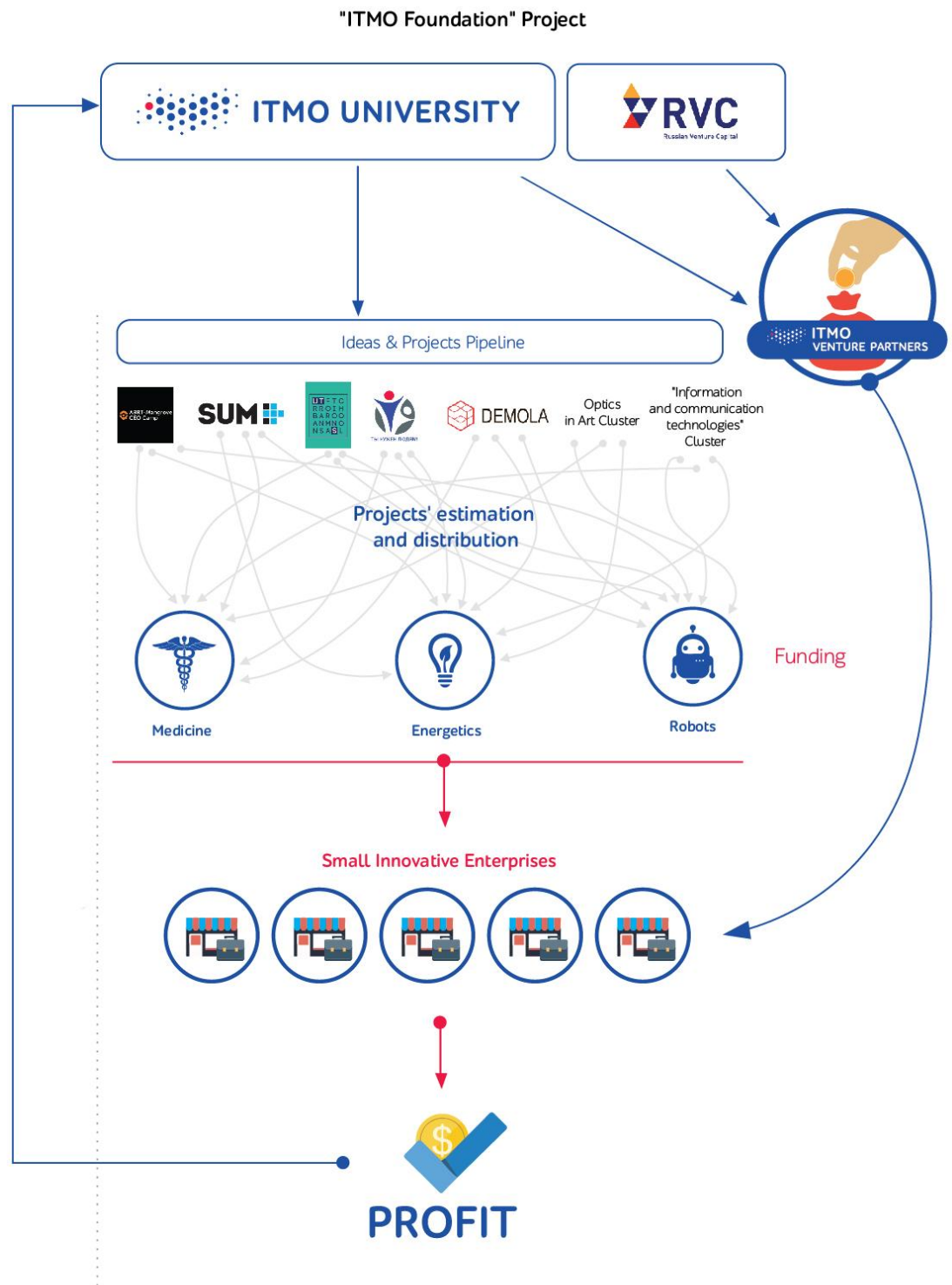


Illustration 7. Concept of the Venture (seed) Foundation of ITMO University

Appendix 12. The International Festival of Social Projects and Entrepreneurship

The International Festival of Social Projects and Entrepreneurship (hereafter called ‘the Festival’) is held by ITMO University annually as a core event for the development of social projecting and entrepreneurship system.

This international event is mainly focused on cooperation with BRICS members and other “rising economy” countries.

The main targets of the Festival are the following:

- implementation and promotion of the best world practices in social entrepreneurship;
- development of students' skills in international communication, leadership and entrepreneurship by means of projects and innovation activities;
- improvement in graduates’ opportunity for competing on the labor market by acquiring ‘soft skills’.

Organizational details of the Festival are as follows:

- invitations to the annual Festival are extended to students' teams from Russian and International Universities (mainly from the BRICS) with proprietary systems and procedures for social entrepreneurship;
- Key criteria for participating in the Festival - team should have the project targeted at improving the quality of life in their local society;
- Selection of the best students' social projects in regional Universities- is according to their own procedures;
- During the Festival students present their projects' results and present business model of further implementation of their project in the form of an enterprise.

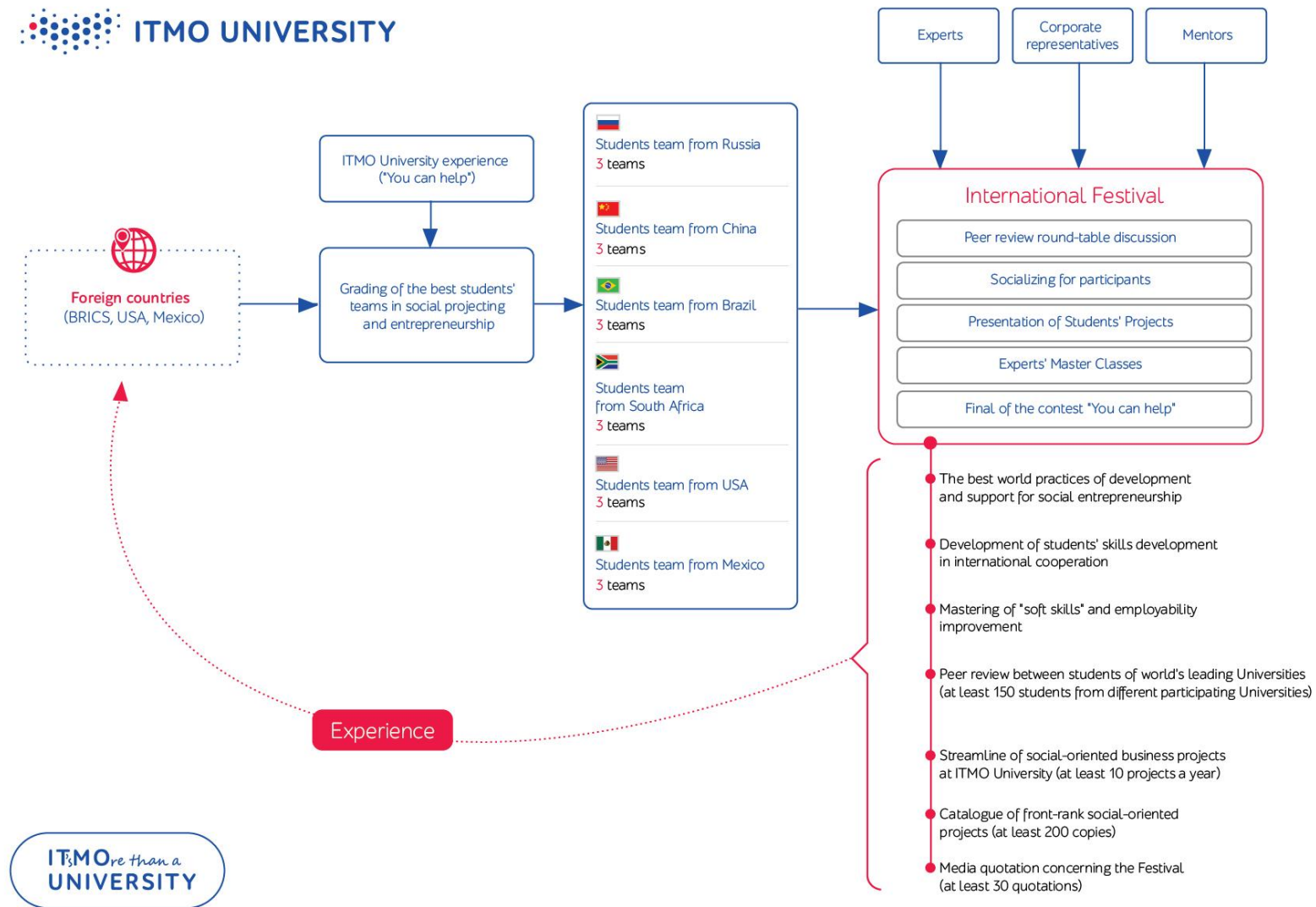


Illustration 8. Concept of the International Festival of Social Projects and Entrepreneurship

Appendix 13. St. Petersburg Annual Forum for Spatial Development

The idea of the Forum is based on the role of St. Petersburg as a center of the knowledge economy and its potential for launching areas for priority development that will become test-beds for models, which can be scalable to other regions in Russia and beyond.

The goal of the Forum is the analysis and expert assessment of St. Petersburg's development strategy and adapting it to meet new challenges.

The objectives of the Forum include bringing together the stakeholders, creating a development scenario for St. Petersburg and Leningrad Oblast, and strengthening the international ties for new global economic environments.

Interdisciplinary and cross-regional working groups as well as expert councils will become a maximally effective tool for the spatial development of St. Petersburg and Leningrad Oblast based on the latest research. The 2015 Forum will feature presentations on three main lines of research: "City of Knowledge"; "Polycentrism. New growth hot-spots and technologies for the transformation of the periphery;" "Greater St. Petersburg. Sustainable development of a conglomeration."

One of the key themes at the Forum will be preservation of the historical legacy and search for new cultural identities of historic cities through innovation and development.

The discussions will continue at such significant events as the St. Petersburg Economic Forum and St. Petersburg International Innovation Forum.

Expected indicators: 1,000 participants, 5,000 online audience, media network of over 50 partners, over 50 international participants.

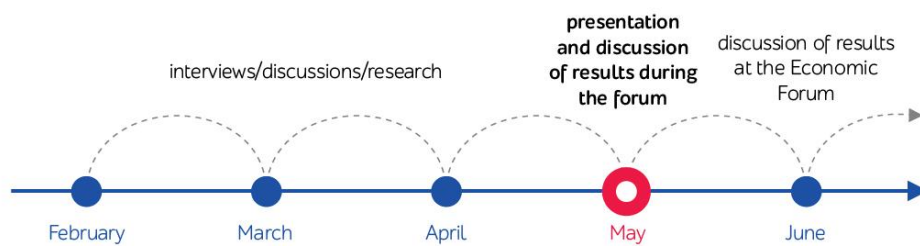


ITMO UNIVERSITY

St. Petersburg Annual Forum for Spatial Development

St. Petersburg Annual Forum for Spatial Development is the platform for communication and joint development of innovative solutions for the city with various stakeholders.

St. Petersburg Annual Forum for Spatial Development is a process of involving and forming of collective knowledge and joint creativity.



Spatial Development Forum

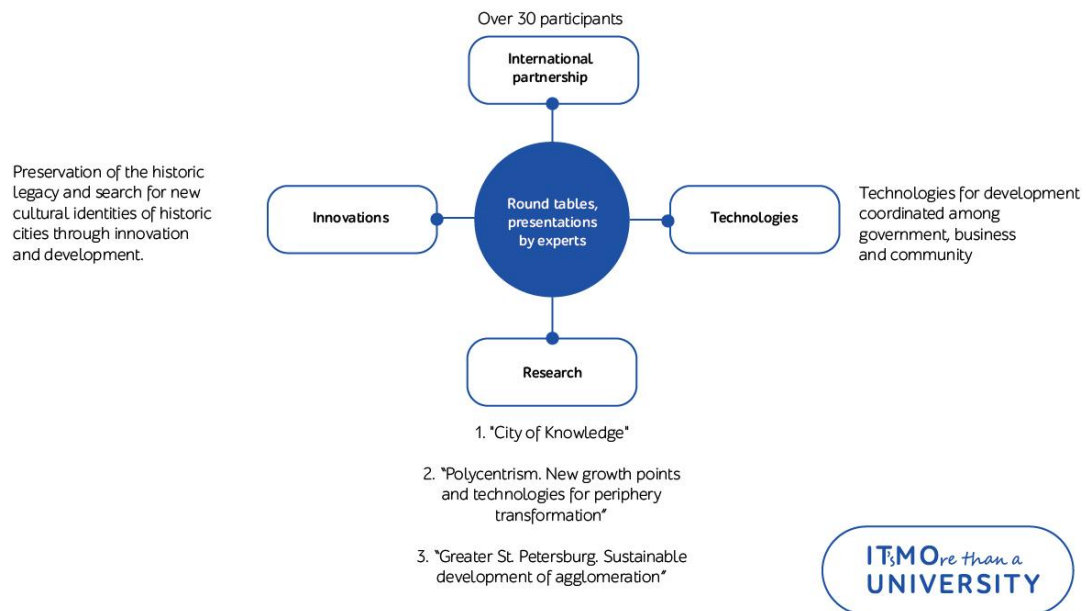


Illustration 9. St. Petersburg Annual Forum for Spatial Development

Appendix 14. Project ‘Foundation of the Innograd of Science and Technology’ (Innograd – city of innovation)

To complete the task of transforming the University into an internationally networked tertiary institution focused on Master’s and post-graduate programs and supported with a well-developed infrastructure and corporate connections, in 2014 ITMO University signed up to the strategic project, ‘Establishing Innograd of Science and Technology’.

The “Satellite city Yuzhny” investment project is a strategic project of St. Petersburg administration (bylaw of Government of St. Petersburg from 07.04.2011 № 438). It is included into the list of priority investment projects signed by Federal Government as a part of Strategy for Social and Economic Development of Northwestern Federal District up to 2020 period (bylaw of RF Government Regulation from 7 of February 2012 № 476p-P16)

According to the Strategy for Social and Economic Development of Northwestern Federal District up to 2020 period, and to the Government Regulation dated 18.11.2011 № 2074-p, the major requirement for forming an innovative economy in Northwestern Federal District lies in the modernization and enhancement of the academic system that provides a framework for rapid economic growth, social stability and national security.

Innograd of Science and Technology (hereafter - ‘Innograd’) is planned to be established between 2014-2019 on the land with an area of 100 ha owned by Developer situated in Pushkin District of St. Petersburg. Innograd will have academic, research, manufacturing, innovation and social facilities (campus, international research labs, Technology Transfer Center, Engineering Center, Center for R&D and for implementing R&D results and commercialization) with total area of 350-400 sq. m including housing, social infrastructure objects, pilot factories and offices with the capacity of 3000 workplaces and 3000 student places.

It is planned to sign the agreement between St. Petersburg, ITMO University, JSC “Rosnano” and CJSC “MC Start Development” in 2015 to establish the “Innograd of Science and Technology” and to approve of the concept of “Innograd of Science and Technology”

The goal of the project lies in establishing Innopolis as one of the new generation of cities focused on the comprehensive development of academic, research, innovative and industrial infrastructure in the Yuzhny satellite city.

Innograd's core specialization is based on the key research competencies of ITMO University and the ones of its partners, whilst not excluding any further or broader lines of research enquiry and the rapid implementation of the project.

The Innograd business model is based on integration of the three axes: education, science and business. Each of these areas of activity are closely connected and process-integrated in order to get high quality and competitive products. All parts of the academic, research and technological environment will be concentrated in Innograd campus area.

A crucial part of the Innograd development concept is fulfilled by University campus as a driver of the knowledge economy based on creation of high benefits and investment in human capital.

The main aim of ITMO University participation in the project consists in the enhancement of the University infrastructure (additional new campus), investing in intellectual property in the project, recruiting human resources and developing knowledge-based economy principles.

There are three stages in the implementation of the Innograd concept:

- 2014-2015: preparation (planning and coordination)
- 2016-2020: transformation of the Innograd academic campus into one of the world's leading Universities, developing priority lines of enquiry; forming a research and innovation hub, managing knowledge capital based on multidisciplinary and integration principles and providing leadership of convergent technologies.
- 2020+: establishment of Innograd as a world's leading ontology center based on innovation principles and technologies in education and R&D, training of highly qualified personnel for the development of the economy and society in the Russian Federation.

Fulfillment of the two milestones of Innograd development provides
achievement of the strategic goal

(in compliance with ITMO University's development milestones)

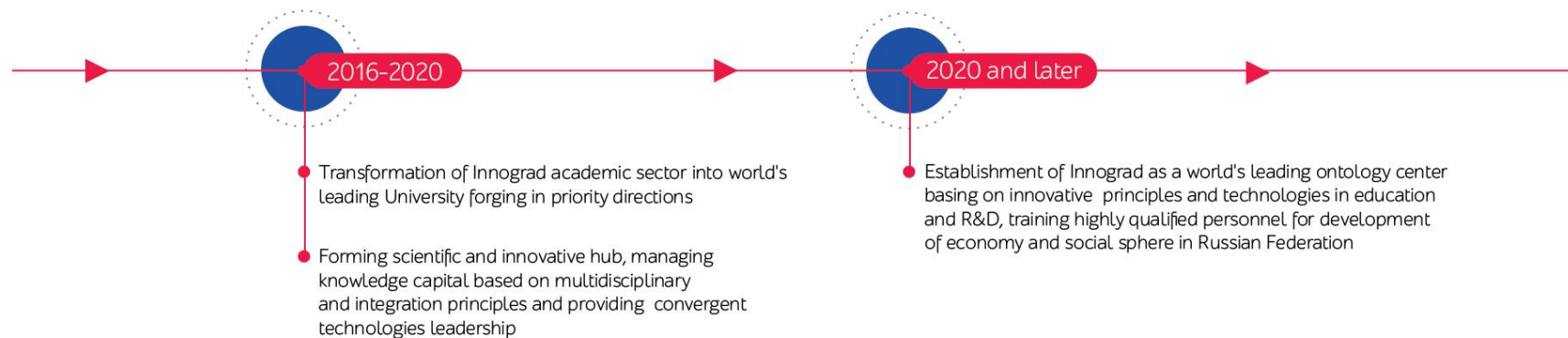


Illustration 10. Stages of Innograd development

Type of real estate	Area	Targeted financing source
R&D Complex (5 Centers of Excellence)	50 000 sq.m	100% – Federal Budget
Engineering Center	11 000 sq.m	
Academic building, lecture hall, conference zone, administrative building	30 000 sq.m	
Business park (accelerator, business-incubator, SIE, venture foundations, center for patenting, licensing and certification)	40 000 sq.m	100% – Investor
Hotel for delegations and guest professors	20 000 sq.m	
Student's dormitories (masters' – for 1800 residents, postgraduate's and professor's for 500 residents)	55 000 sq.m	100% – Federal Budget
Boarding school for 200 residents	7 000 sq.m	
Extracurricular Infrastructure	9 000 sq.m	100% – Investor
Social Infrastructure	15 000 sq.m	100% – St. Petersburg Budget

Illustration 11. Infrastructure of Innograd of Science and Technology

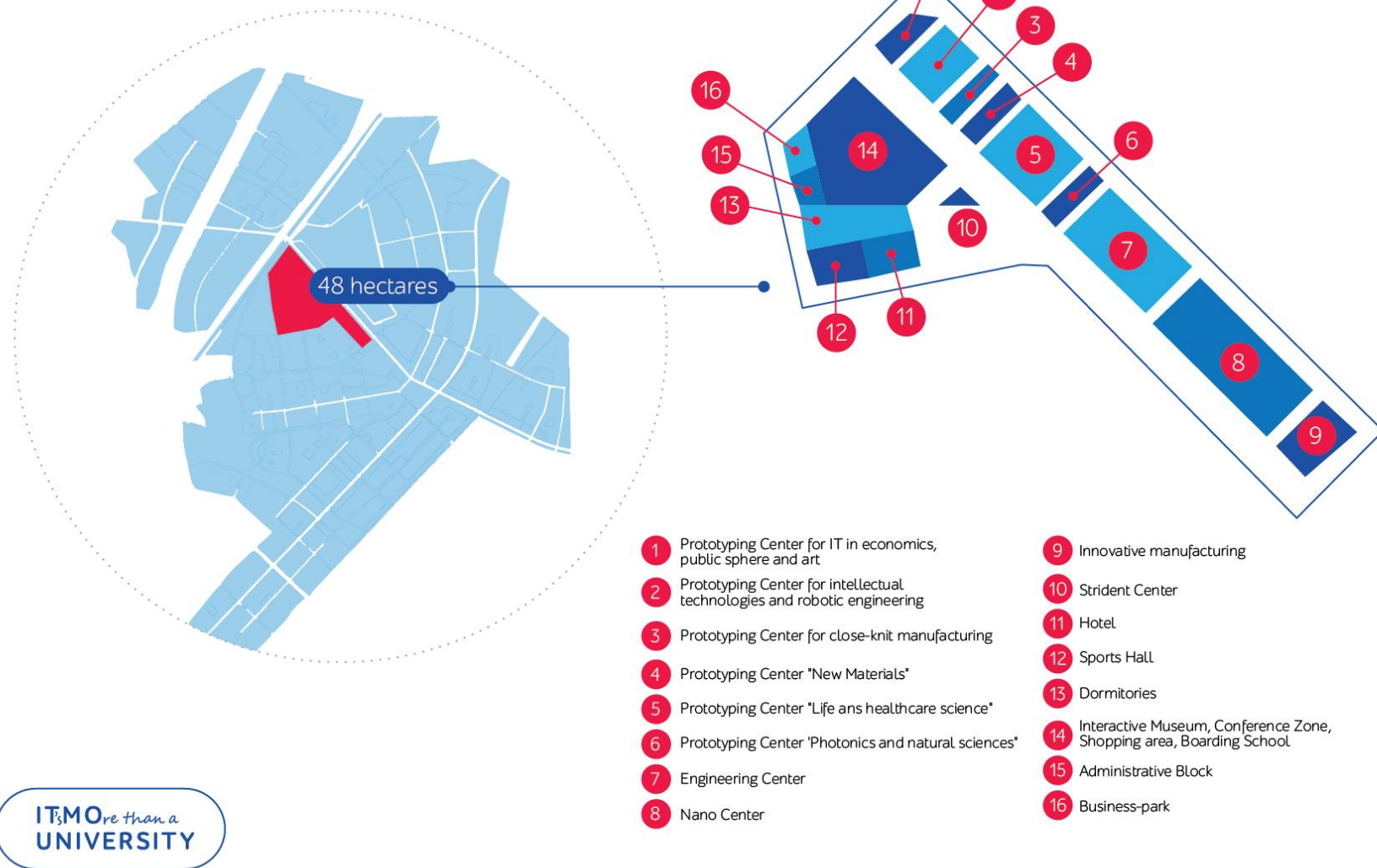


Illustration 12: Location of the infrastructural objects of the Innograd

Appendix 15. Project ‘International Technological Cluster ‘IT, Communications and Optics in Culture and Art’

‘Art, science and technology’ as a single field of study is relatively absent from university curricula around the world. Currently the knowledge and disciplines in this area are fragmented. A single institution that brings together knowledge and modern technologies not just for the study of art objects and creation and preservation of cultural legacy but also for disseminating the created content and its monetization will create a technological platform for future use by artists and will be in demand by a variety of industries looking for new business processes and transformation. Some of those industries are telecommunications, media, music and cinematography, tourism, education as well as manufacturers of playback equipment, optics and microelectronics. The leaders in those industries point to a critical lack of a new ecosystem for their future sustainable development.

International Technological Cluster “IT, Communications and Optics in Culture and Art” is developed with a goal of preserving the cultural legacy and offering access to objects of culture in digital and mixed formats to a wide audience. Its other goal is creating technological conditions for realizing the approach of culture as a driver of socio-economic development. The cluster involves the technological lines of enquiry needed for creating an ecosystem of production and dissemination of digital content in culture, art and education. The foundation is set by the advanced achievements of ITMO University in photonics, multimedia and usability while distribution and commercialization will be carried out together with the University’s partners. The goals of the cluster:

- Boosting ITMO University’s competitiveness among the leading research and education centers by creating the center of excellence “IT, Communications and Optics in Culture and Art” that serves as a source of strategic technologies and expertise for a variety of industries and also as a hub for a new ecosystem that encompasses all the elements of the production chain: research and designation of objects, content creation in digital and mixed forms, dissemination, monetization and payment system.
- Capitalization of existing and planned R&D by ITMO University in the

aforementioned areas.

The proposed approach:

The working group determines the direction for the research that becomes part of the ecosystem. Then the group analyzes existing projects, resources and competences within ITMO University, in Russia and abroad. The working group forms an Expert Council that includes members of IMTO, partner universities and key industries. The Expert Council goes through the process of filling the ecosystem with projects from various sources, considering ITMO's interests. For existing mature technologies a way for commercialization is found. In cases of a project being initiated outside ITMO and it's not feasible to create a competing product, it is decided whether it would make sense to involve the owners of the project in the ecosystem or possibly purchase it through investors.

Research and development is carried out and coordinated by ITMO University. In a case when a cluster project participant is ready for investment by an outside investor, the investor is evaluated based on the interests of the existing participating industry partners. Thus the operating principle of industry-orientation is being realized. The industries "inject" tasks that need solutions into an academic environment with the prospect of either a purchase or development of a commercial project. Potential for development:

In research and publications – high potential, primarily in the field of finding new ways to visualize cultural objects (photonics) and cross-disciplinary research in finding and disseminating content to target audiences. Some areas include the convergence of sociology, anthropology, interpretation of Big Data, content analysis and development of new interfaces.

In international collaboration between universities and research organizations – high potential. An interest in this category has already been expressed by the colleagues from University of Florence, Italy; University of Texas; CreaCannes Creative Cluster, France; IESL/FORTH Greece; TUD Netherlands; USTTUT ITO Germany; POLITECNICO DI MILANO Italy; LRMH France; Fraunhofer Germany; Shanghai University, China; museums and galleries; associations of cinematographers.

In technology entrepreneurship – high potential. The expected number of commercialized projects during the first two years after the organizational stage is over seven. (Maybe much greater at the entrance stage). Potential industry partners and clients include companies such as Samsung, Thales Alenia, France Telecom, national ministries of culture and their regional departments.

In education – high potential. Implementation of the projects suggests a significant number courses in demand by industries as part of a Master's program or as short-term programs.

Financing and commercialization:

Research and development, the working group and the Expert Council (for forming the pool of projects) are mostly financed from the ITMO budget. Further financing is through attracting investments and/or clients in respective industries.

Commercialization of results is carried out by the University having a share in these respective projects or through direct sale of intellectual property. Participation in a specialized investment fund is also considered.

The participants of the first phase include:

- ITMO University (Museum of Optics, Center for Design and Multimedia, Department of Projects and Innovations, International Laboratory “Intellectual methods of information processing and semantic technologies.”)
- Aleksandrinskii Theater
- Russian Museum
- St. Petersburg State University of Cinema and Television
- Administration of St. Petersburg

International partners include University of Florence, Italy, CreaCannes (French cluster), IESL/FORTH Greece.

Examples of key projects:

- System of personalization of information channels
- 3D/4D presentation system of objects of culture
- Integrated system of mutual settlements and payments for content use by telecom companies, Over the Top Content, advertising agencies, merchants and owners of content.



ITMO UNIVERSITY

Current situation with technologies
for culture and art

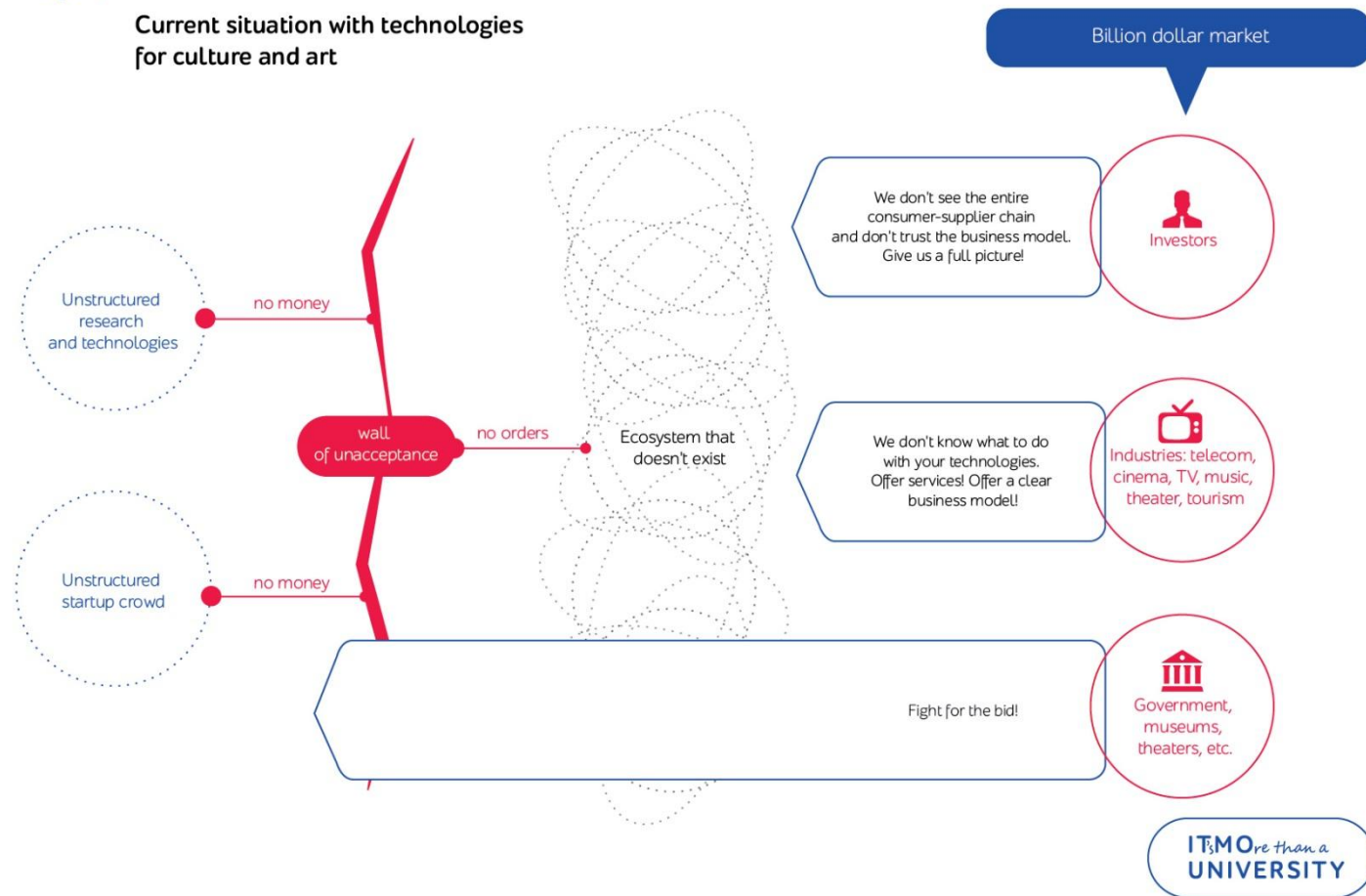


Illustration 13. Today's situation with technologies for art and culture

How a cluster works

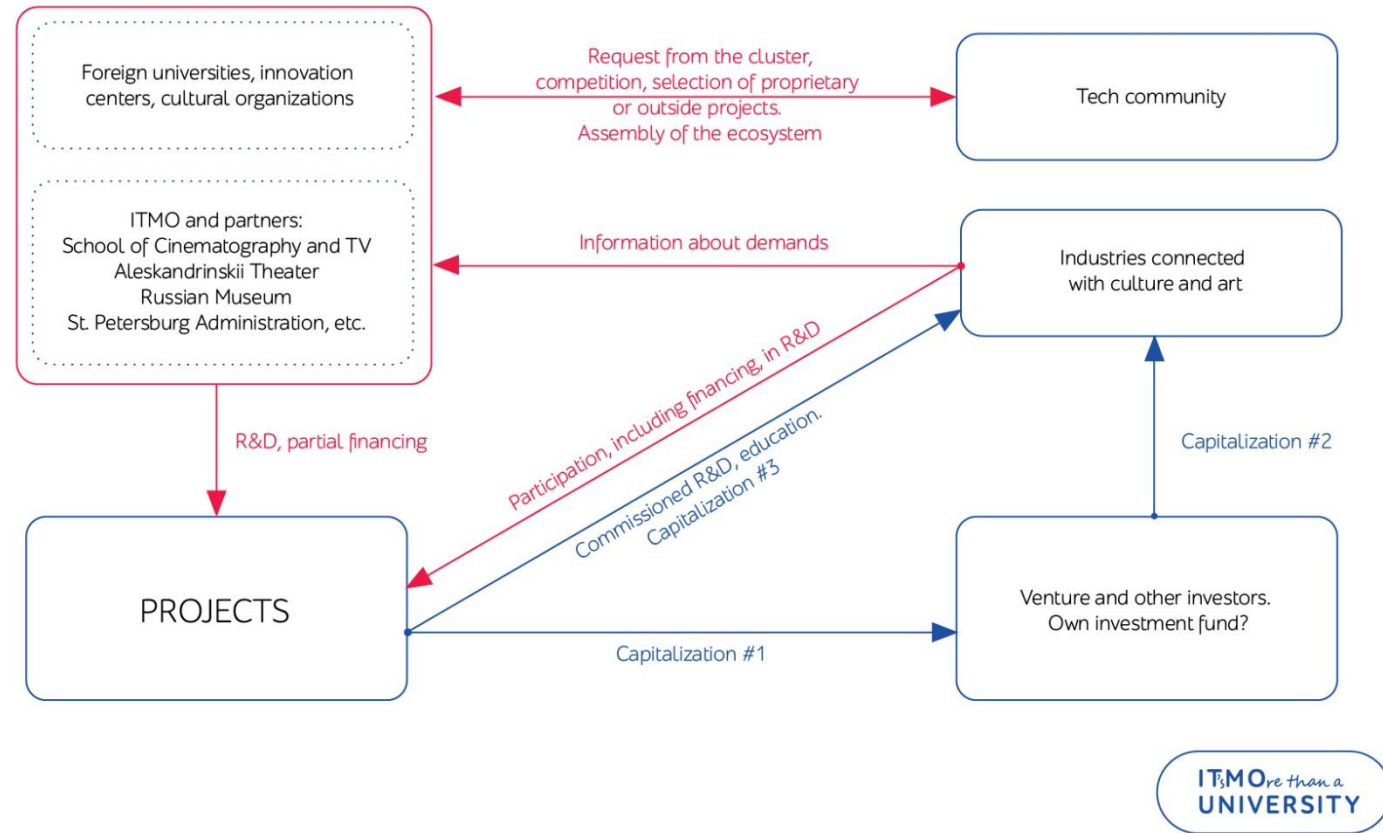


Illustration 14. Cooperation of the members of the Cluster

Cluster "IT, Communications and Optics in Culture and Art".
Technological ecosystem

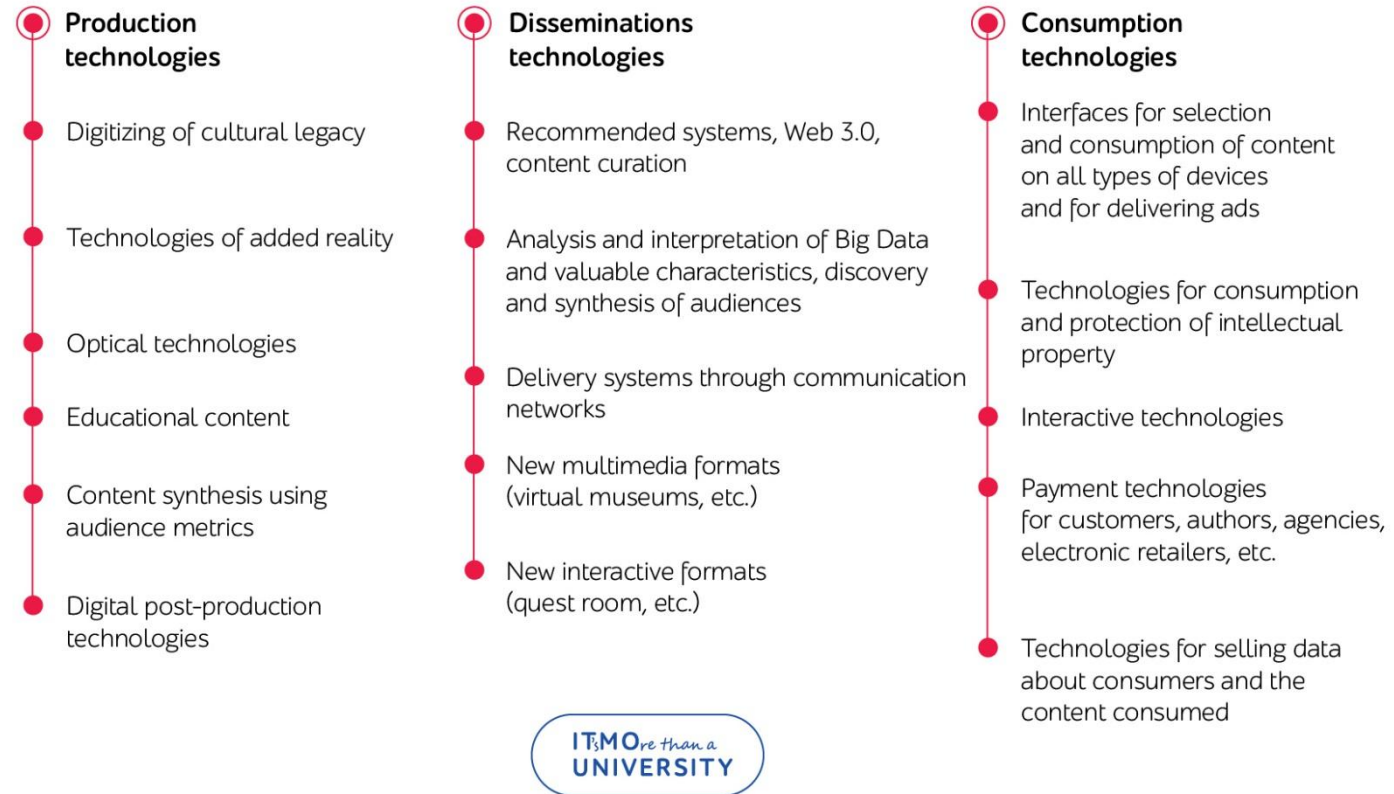


Illustration 15. Cluster. Technological ecosystem Part1



ITMO UNIVERSITY

Cluster "IT, Communications and Optics in Culture and Art."
Technological ecosystem

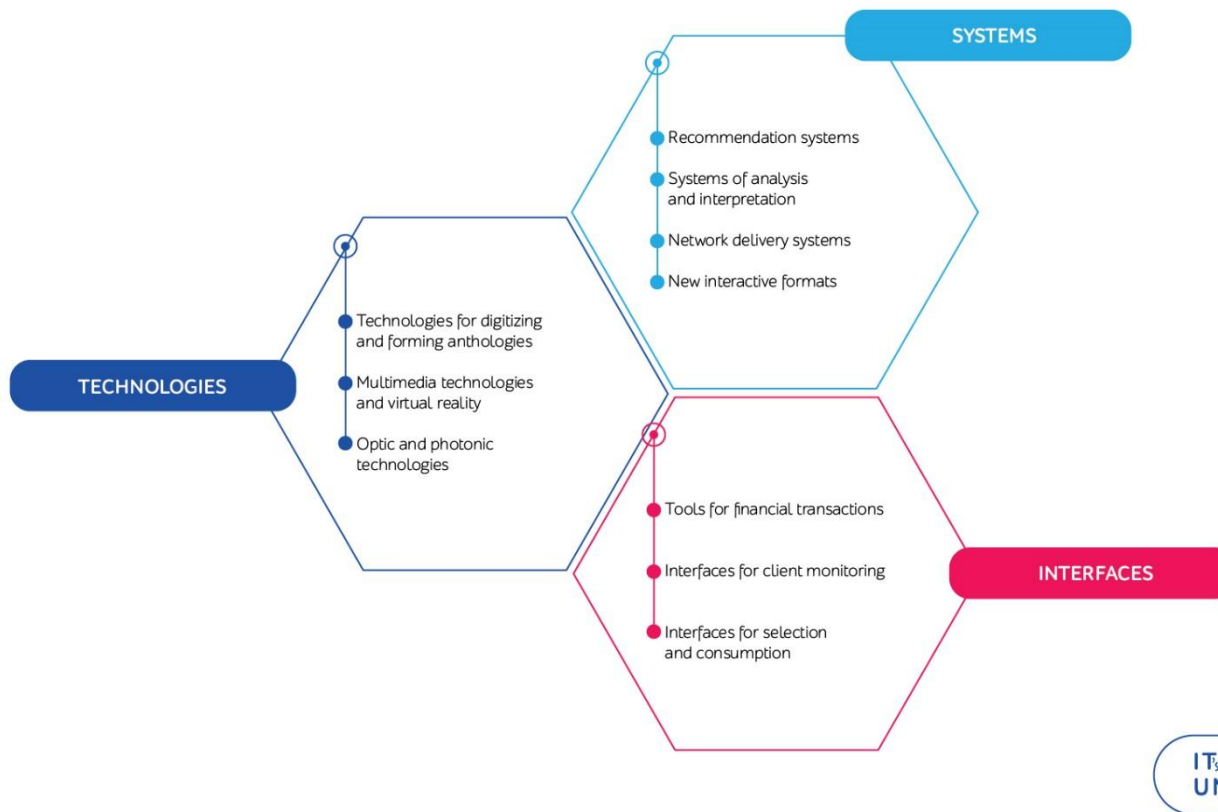


Illustration 16. Cluster. Technological ecosystem Part 2

Appendix 16. Project «Foundation and development of the city prognostic cluster»

According to Federal Law dated 20th of June 2014 N 172-FZ “About Strategy Planning in Russian Federation”, “Prognosis of Science and Technology development of Russian Federation” is one of the main documents concerning strategic planning in Russia.

Implementation of the Law requires correspondence of upper strategic level with regional and industrial strategies and prognoses. It also requires establishing of ad-hoc prognostic centers on territorial entities of Russian Federation.

Promotion of proprietary developed products and technologies, improvement of image of the University requires global marketing efforts for R&D results, technologies, labs and active technological PR on international markets. These efforts may be made on a basis of specially established expert and prognosis instrument - St. Petersburg international cluster for technological marketing and prognosis of convergent technologies. This cluster will be established based on ITMO University as a strategic decision-making center and will involve other industrial, infrastructure and utility organizations of the city. It means that cooperation with external participants (network partnership) will have a significant influence on Cluster operations.

The goal of the Cluster is creation and promotion of technological initiatives of ITMO University in prognostic and strategic planning system in Russian Federation from the city level using city resources. The task of the Cluster is in providing of all members with the clear picture of future demand for new technologies, their spheres of implementation and harmonized methods of their promotion.

One of the main Clusters' functions is in forming of the vision concerning future demand for technologies. The framework of “decision-making space” dictated by the specifications made by ITMO University and other commissioners, corporations, small and mid-size businesses supports the vision-forming function.

Cluster concentrates its activities on R&D's potential estimation, new technologies' development in defined areas (convergent technologies), monitoring and forming of technological landscape.

We should note that R&D prediction is impossible without implementation efforts. Fundamentally, it is function of development and implementation of strategy for several scientific fields.

As a part of operating activity, Cluster cooperates with world's leading technological brokers (Ernst&Young, Yole Development). It provides understanding of perspective technological requirements of global industrial leaders of different spheres in a 3-5-10 years' perspective and comprehension of new business models.

Cluster can support forming of perspective R&D of the University. One of the functions of the Cluster for ITMO University - estimation of perspective models and participation in research plans generation.

Appendix 17. Council for International Recruitment

In order to staff ITMO University with the highly qualified personnel, we've created the Council for International Recruitment. (hereinafter - CIR) (See pic. 17).

The Council forms and regulates the work of Specialized Selection Committees (SSC) according to their specializations and of the Expert Boards within the SSC.

A search for potential candidate may be initiated due to the expiration of the employment contract or upon internal request from the University's departments.

HRM Department announces that the job opening is available and initiates the search for potential candidates. Incoming requests and requests for employment contracts' extension are transferred to the Expert Boards of the SSCs. The heads of the departments with job openings accompanied by a subordinate serve as members of the Expert Boards, alongside with an HR specialist and other SSC members.

SSCs control the work of the Expert Boards; check the eligibility of the candidates and form the short-list. CIR evaluates the contest proceedings, approves of the candidates from the short-list. Next step is the final selection of the candidates. Depending on the perspective position of the candidate there are several Councils participating in the selection process.

More than 10 independent experts from the world's leading HR companies with representative offices in Saint Petersburg comprise the CIR. These companies are: Adecco Group Russia, Ancor, AZL Professional Services, Brainpower, CEB's SHL Talent Measurement Solutions, Coleman Services, Consort Group, Human Search, Kelly Services, Luxoft (Luxoft Personnel), Morgan Hunt, Employment Services of Saint Petersburg, Business Kernel, Avrio Group Consulting, Hays, Manpower

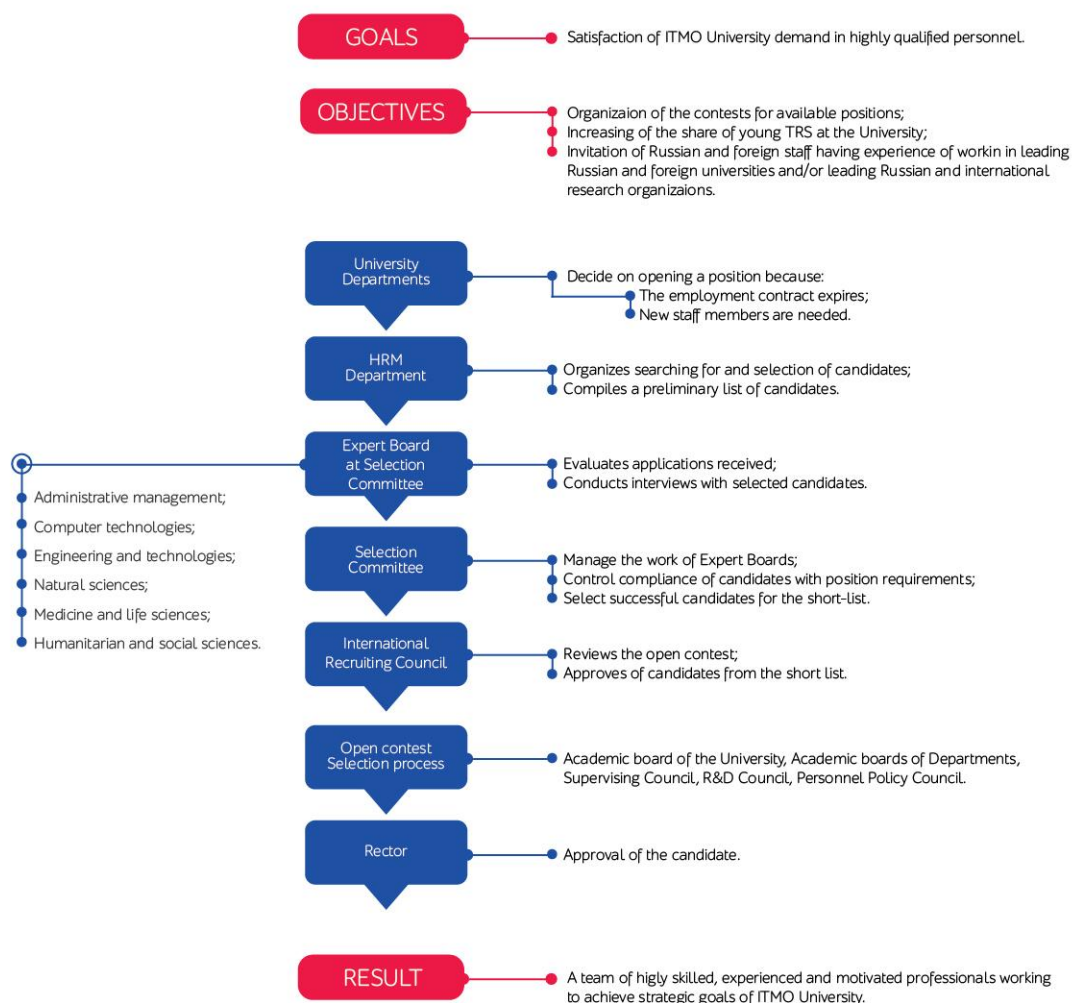


Illustration 17. International recruiting system in ITMO University

Appendix 18. International Year of Light and Light-based Technologies in Saint Petersburg



International Year of Light

CONTACTS

Institute of International Development and Partnership
ITMO University
197101, Russia, St. Petersburg,
Kronverksky pr, 49
E-mail: international@mail.ifmo.ru

ITMO University Representative Office
Belgium, 1000 Brussels, Rue Du Luxembourg, 19
E-mail: brussels@mail.ifmo.ru

light.ifmo.ru/en
E-mail: light@myifmo.ru

ITMO UNIVERSITY

**INTERNATIONAL YEAR OF LIGHT
IN ST. PETERSBURG, RUSSIA**

**IT's MOre than a
UNIVERSITY**

 **INTERNATIONAL
YEAR OF LIGHT
2015**

light2015.org

**IT's MOre than a
YEAR OF LIGHT**

light.ifmo.ru
2015

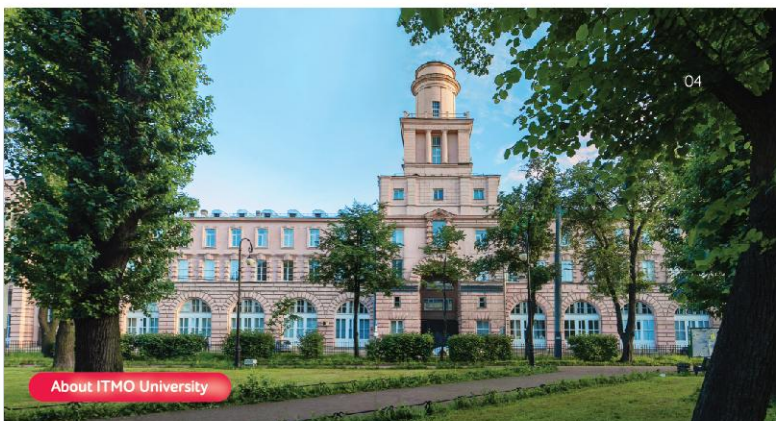


ITMO UNIVERSITY WELCOMES THE YEAR OF LIGHT 2015



"ITMO University is delighted to participate in the celebration of the International Year of Light 2015, promoting the advancement of knowledge about light, optics and light-based technologies, inspiring future generations to careers in these fields, and contributing to international cooperation and understanding through Light."

Vladimir N. Vasilyev
Rector of ITMO University, Professor,
Corresponding member of the Russian Academy of Sciences



About ITMO University

The Saint Petersburg State University of Information Technologies, Mechanics and Optics (ITMO University) is one of the leading higher education institutions in Russia, providing training and research in advanced science, humanities, engineering and technology.

Founded in 1900, ITMO has grown to an organization with over 13,000 students and earned its name "National Research University," blending the culture of innovation and discovery with world-class education.

Some of our best-known work is in Photonics, Precision Mechanics, Computer Science and Information Technology. On the forefront of scientific research, ITMO University tackles some of the world's top scientific challenges and strives to support an environment of interdisciplinary scholarship and innovation.

The main campus is located in the heart of St. Petersburg, steps away from Peter and Paul's Fortress. It also offers easy access to the Hermitage and other world-famous museums and monuments.



Saint Petersburg

Founded in 1703 as a Russian "Venice of the North" this city attracts over 6 million tourists a year. Our city has many times been mentioned among the top 10 tourist destinations of the world.

Feel yourself in the center of cultural life of Russia, home of the Russian ballet and motherland of many renowned scientists, artists and musicians.

Enjoy to the light-filled White Nights of Saint Petersburg to the fullest extent possible: this precious time is short, offering traveler a chance to stroll in the magnificent downtown at midnight near the beautiful palaces just like during the daytime. Magic becomes real thanks to Light!

ISDH 2015

10th International Symposium on Display Holography

The 10th International Symposium of Display Holography (ISDH) will take place in St. Petersburg, Russia on June 28 - July 3, 2015. After USA (2012), China (2009) and Wales (2006), ITMO is excited to host ISDH, the most prominent symposium of display holographers. Established by T. Jeong in 1982 at Lake Forest College, Illinois, USA, this year's event will be in memoriam of Russian holography pioneer Yuri Denisyuk, thanks to whom St. Petersburg is considered the "Russian cradle of display holography".

The ISDH is a unique event. It is not like any other scientific conference. Rather, it is one that synthesizes history, education, art, science, and economic developments that involve holography. A unique purpose of the ISDH, besides the exchange of information on display holography, is to create a sense of community among participants. Artists, imaging scientists and business people are invited to attend.

The 2015 symposium promises to showcase the latest advancements in holography and holographic imaging, including state-of-the-art computer-synthetic and electronic holography for display purposes. It will also focus on the recent developments of large-format color holograms, the use of ultra-realistic color holographic images for the recording of unique museum artefacts, as well as the history and the future of holography.

08

09

"Magic of Light" exhibition

Most of the museums we know read "do not touch" signs next to the exhibits. There is something different about the Museum of Optics at ITMO University. Not only you are welcome to touch most of the artefacts presented there, but also visitors are encouraged to participate, interact, see the functional exhibits in action and enjoy the museum experience to the fullest.

A visit to the "Magic of Light" exhibition is something not to be missed: this year Hellenic Institute of Holography and ITMO University will present Optocloned – 3D holographic images of the famous Faberge imperial eggs.

Youngsters and researchers, parents and students – everyone will find something for oneself to get busy with. Authors of the "Magic of Light" exhibition believe that popular science, fascinating and puzzling, is attractive for all and want you to share this excitement it in 2015.

One of the important events to take place in the framework of the Symposium is the opening of memorial board dedicated Yuri N. Denisyuk.

The ISDH 2015 is organized in collaboration with the Hellenic Institute of Holography (Athens).

When: 28 June - 3 July 2015
isdh2015.ifmo.ru

BE THE LIGHT!

Year of Light is meant to be exceptional for everyone. Join us in the upcoming events and celebrations to spread the appreciation of the central role of light in science and culture, as well as in our everyday lives. Be inspired and inspire others!

For students

• • • • • International Poster Contest

Aimed at spreading the word about the Year of Light, this contest welcomes students of all St. Petersburg universities. Create a poster with light-related images and win the best prizes! Posters will be evaluated according to their originality and quality.

Deadline for poster submission: March 30, 2015

light.ifmo.ru
international@mail.ifmo.ru

For aspiring scientists

• • • • • OS 2015

International Optical Seminar

Optical systems design, image software tools and computational optics, among other topics, will be in the spotlight of this seminar, coming to ITMO University on May 18-21.

aco.ifmo.ru/opt_seminar/eng/
bakholdin@aco.ifmo.ru

10

11

For innovative-minded researchers

• • • • • Innovative projects competition in the field of photonics – 2015

On the cutting edge of innovation, this completion encourages technology transfer from Russian universities and research centers to the industry.

Scientific areas targeted:

- | | |
|------------------------------------------------------|------------------------------------------------------|
| 1 Photonics Hardware Components | 6 Photonics Hardware Components |
| 2 Industrial Laser Technologies and Methodologies | 7 Industrial Laser Technologies and Methodologies |
| 3 Photonics in Medicine and Life Sciences | 8 Photonics in Medicine and Life Sciences |
| 4 Information Laser Systems for Special Applications | 9 Information Laser Systems for Special Applications |
| 5 Information and Communication Laser Technologies | 10 Information and Communication Laser Technologies |

Deadline for applications: September 1, 2015

kazin@mail.ifmo.ru

There's MOre to IT!

Museum of Optics

Optimus, the first interactive Museum of Optics in Russia, is a place for active learning and research. Many optical phenomena and optical devices are presented here in the form of interactive exhibits that help you grasp the heart of these phenomena, to see examples of optical science in the world around you, and, perhaps, to make your own discoveries.

We invite you to excursions and lectures. Besides, we invite you to experiment with Light and enjoy fascinating optical effects while learning about the amazing world of Optics.

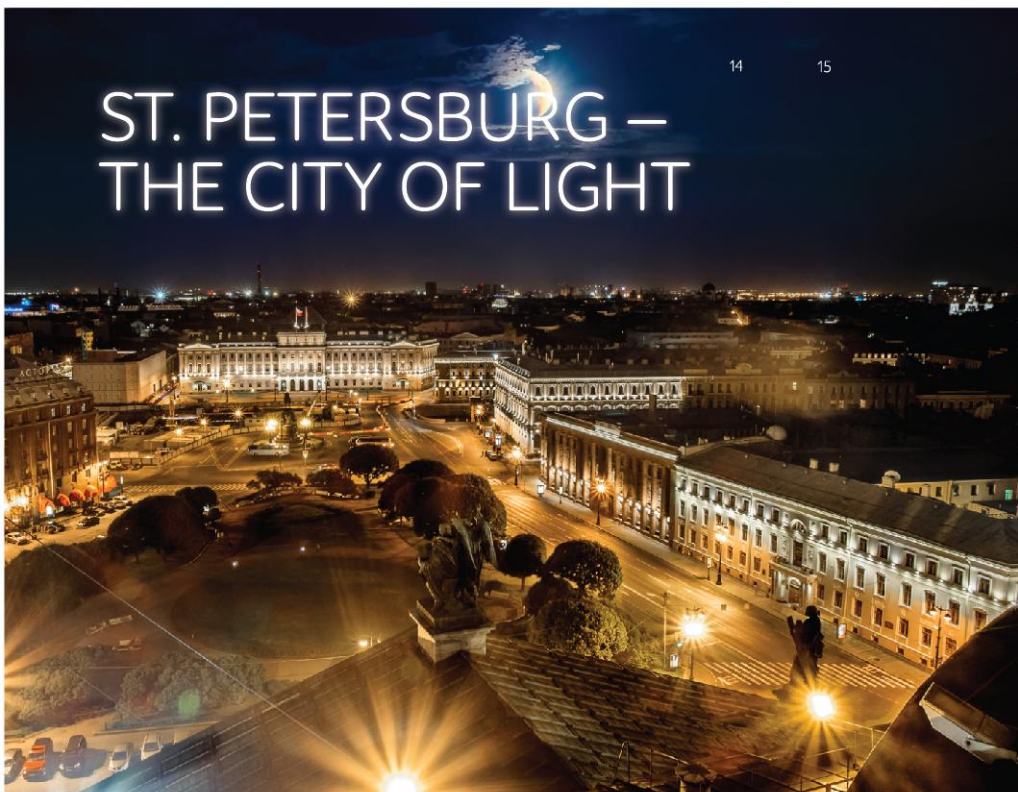
The goal of the Museum is to inspire schoolchildren, teenagers and students to study Optics and help them to better understand the subject. A great emphasis is also made on the History of Optics.

During the International Year of Light 2015 guided tours of the Museum will be available to everybody. We hope you will enjoy your visit – and come back again many times.

When: Year 2015
optimus.ifmo.ru/en



14
15



ST. PETERSBURG – THE CITY OF LIGHT

- **"Magic of Light" exhibition**
Children, students, parents - curiosity drives us all. This exhibition welcomes all those interested in the phenomenon of Light and its forms. Interactive exhibits and the concept of Edutainment will have everyone busy! Optoclones – 3D holographic representations of famous Faberge eggs will leave you breathless!
- **Leader Tower lighting project**
The tallest skyscraper in St. Petersburg will be wrapped in projecting images advertising the International Year of Light 2015 in our city.
- **Dialogue with the International Space Station**
Message from the stars? St. Petersburg, get ready! The astronauts from the International Space Station will talk to the public about ecology and the future.
- **Alley of the Light Park opening**
With support of the city government and partnership with Philips Company, beautifully and sustainably lighted alleys will be opened in Alexandrovsky Park in St. Petersburg and on Birzhevaya Line.
- **"Generate your own Light" Marathon**
Move as fast as you can, run at the speed of light, jump for green energy and more! Light the summer!
- **TV and Radio**
"100TV" Channel and "Neva-FM" radio station will run weekly programming highlighting the importance of light our lives.